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ABSTRACT

Project REDEAL (Research and Evaluation of Distance Education for the Adult Learner) was designed to investigate the motivation and management of adult learners in the distance educational setting of Athabasca University in Edmonton, Alberta. During the course of the 22-month project, specialists compiled a series of research and technical reports dealing with such topics as the past and present effectiveness of distance education, the relative benefits of distance education, educational strategies employed in distance education and especially in the Athabasca program, and the relative effectiveness of various student motivation techniques. To disseminate the information gathered during the evaluation effort, project staff developed an implementation plan that included publication of the REDEAL research and technical reports, presentation of a REDEAL seminar series, and an effort to integrate REDEAL staff into Athabasca University. (This final report consists of summaries of REDEAL reports devoted to such topics as distance education from the learner's perspective, measurement of attrition and completion in distance learning courses, interface with the host institution, the use of a personalized system of instruction in distance education, the effectiveness of tutor management, strategies and peer tutoring in distance education, the effects of a behavioral self-control package on distance learner behavior, and factors affecting learner motivation in distance education.) (MN)

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Project REDEAL

Project REDEAL Final Report to
Advanced Education & Manpower
Dan O. Coldeway
Project Director
REDEAL Technical Report #3

October, 1980

Sponsored by
Innovative Projects Fund
Advanced Education and Manpower
and

Athabasca University

Athabasca University

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Project REDEAL

10/80

Introduction

Beginning January, 1979, the Innovative Projects Fund of Advanced Education and Manpower funded Athabasca University, under the direction of Dr. Dan Coldeway, to begin an 18-month investigation into the motivation and management of the adult learner in the Athabasca University distance educational setting. The project using the acronym REDEAL¹ was officially completed on October 31, 1980, approximately 22 months from the January 1, 1980 funding date.

This final project report represents a compilation of information on each of the REDEAL research and evaluation efforts (see REDEAL Technical Report #1). Detailed reports, of both a technical and research nature, are available on each REDEAL project (see Appendix in this report).

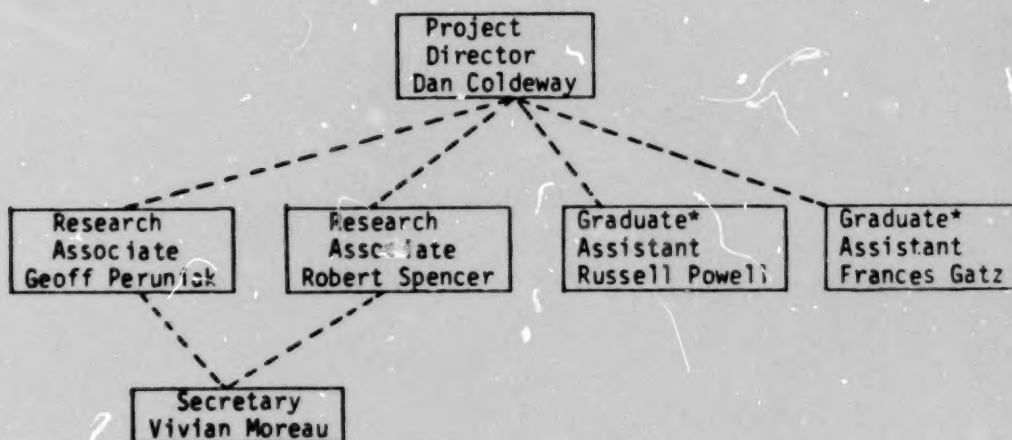
REDEAL Staffing and Organization

REDEAL began with the recruitment of professional staff to positions defined in the project description of work. It was the intention of the project proposal to capitalize upon professional expertise for REDEAL using both Athabasca University staff (e.g. Dan Coldeway, Head of Instructional Design at Athabasca University, serving as Project Director) and professionals not previously involved with Athabasca University (e.g. Geoff Peruniak and Robert Spencer, REDEAL research associates not previously employed at Athabasca University). The rationale for this staffing strategy

was two-fold. First, it was hoped that professionals NOT familiar with Athabasca University and not having pre-determined status with respect to Athabasca University course and delivery system design and procedure, would be in a better position to take an objective look at the institution. Moreover, if such objectivity was obtained, the results would produce a fresh and hopefully more creative approach to variables important in the development of Athabasca University.

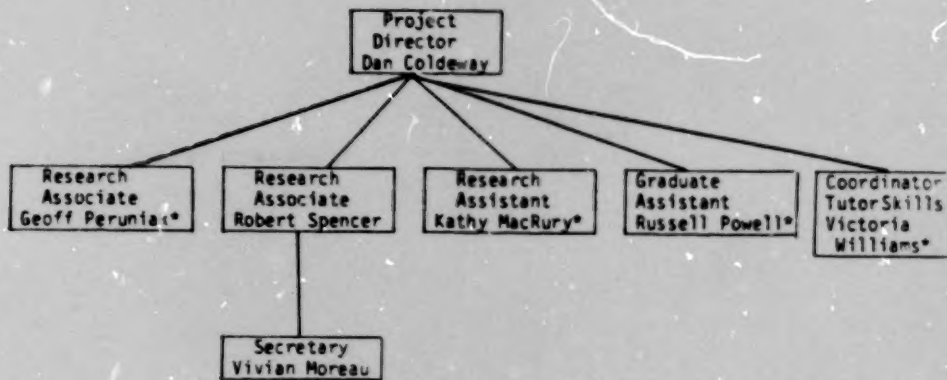
Second, REDEAL required specific types of expertise which were not readily available within the institution. Educational psychologists with specific experience and expertise in learner management, evaluation and research design, and with a keen interest in innovative post-secondary educational theory were sought.

During the first half of the REDEAL project, the REDEAL team was configured as follows:



*Part-time status

The final REDEAL team configuration was as follows:



*Part-time status

REDEAL also employed the services of two outside consulting groups. Carkhuff Associates, Inc. were contracted to assist in the preparation of a tutor skills training package. Evaluation Consultants (Edm.) Ltd., under the direction of Dr. Al MacKay and Ms. Mary Anne Doherty were also contracted to provide assistance in the evaluation of REDEAL.

Figure 1 indicates the schedule of events that took place over the 22-month REDEAL project. Activity directly related to REDEAL efforts taking place after October 31, 1980 are also included on the chart.

Summary of REDEAL Activity for January, 1979, to Present

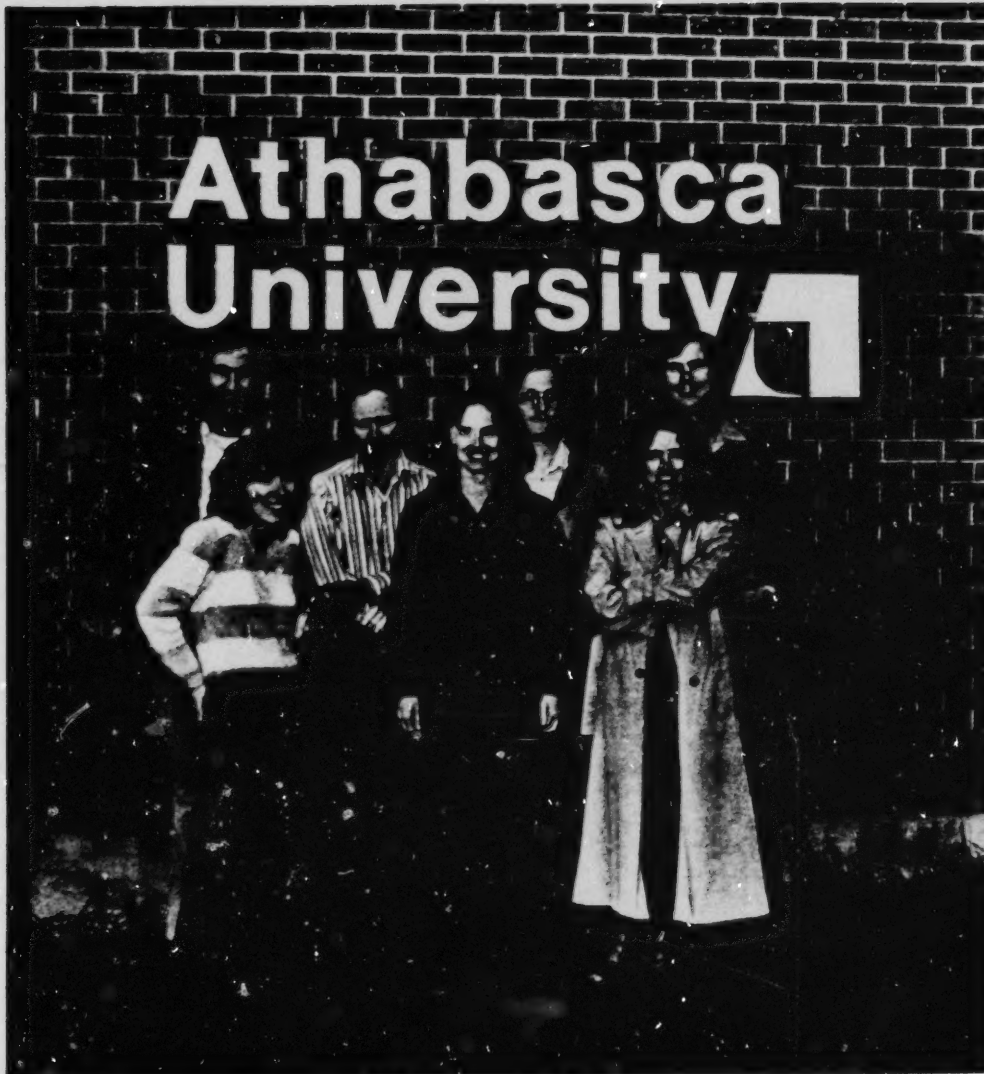
The project began with a large recruitment effort encompassing both Canada and the United States. As was mentioned previously, the goal was to locate professionals with specific skills and experience.

Table 1
REDEAL Team Members

Name	Title	Recruited or Seconded From
Dr. Dan O. Coldeway	Project Director	Athabasca University
Dr. Robert Spencer	Research Associate	University of Kansas
Dr. Geoffrey Peruniak	Research Associate	Ontario Institute for Studies in Education
Ms. Kathy MacRury	Research Assistant	University of Alberta
Ms. Victoria Williams	Coordinator of Tutor Skills	North Texas State University
Mr. Russell Powell	Graduate Assistant	University of Alberta
Ms. Francis Gatz	Graduate Assistant	Indiana University
Ms. Vivian Moreau	Secretary	Grant MacEwan College
Dr. John Daniel	REDEAL review team	Athabasca University
Dr. Doug Shale	REDEAL review team	Athabasca University

REDEAL Team Members

October, 1980



Back row, left to right: Bob Spencer, Geoff Peruniak, Russ Powell,
Dan Coldeway. Front row, left to right: Vivian Moreau, Vicki
Williams, Kathy MacRury. Missing: Frances Gatz

Specific REDEAL activity was therefore delayed until April when both research associates were relocated in Edmonton and other staff were employed. Although specific project-related activity was delayed until April, the importance of successful recruiting should not be underestimated. Because of the difficulty in hiring to term-specific positions there is a strong tendency to focus recruitment activity in only the immediate geographical area of a project. In the REDEAL recruitment effort it was felt that the quality and experience of full-time professionals was of highest priority to project success. Although applicants from the Edmonton region were potentially available, the decision to hire more qualified personnel took precedence over having the luxury of having people on board quickly. Excluding geographical location and therefore speed of relocation, the decision to have Drs. Peruniak and Spencer was made using rather strict criteria for skills and expertise. Similar criteria were also used in the selection of graduate assistants and research assistants.

During the project recruitment and organization phase, attention was also paid to many factors often not discussed in project funding and planning. Issues like office space, benefits to project staff, budget control, procedures, etc. are often overlooked. For a project of the REDEAL size and scope, within the context of a young and inexperienced university (in the research and development sense) such issues can be crippling. Not only do these issues require considerable attention by the project director, they also require the expenditure of funds not anticipated in the proposal stage.

Although funding flexibility can be a possibility, early work on REDEAL required much effort in budget adjustments to accommodate many of these concerns.

With the arrival of the REDEAL team, work began to identify the problem requiring research and evaluation attention. This occurred in two major ways. First, as was described on page three of REDEAL Technical Report #1 (Interim Report), under the heading, "Research Questions and the Perceptions of AU Staff", an attempt was made to identify the concerns of Athabasca University staff in relationship to the management and motivation of learners. This step was critical to the establishment of project priorities and to ensure that REDEAL activity would be viewed as important to staff at later points (i.e. when results were being discussed).

Second, the team also spent time examining and more carefully defining the specific directive for activity specified in the project proposal. REDEAL priorities were therefore determined by both staff perceptions and the preference of REDEAL team members. Many modifications to REDEAL project priorities also occurred at the interim report stage in August, 1979.

Beginning in September, 1979, all REDEAL projects were activated and data started coming in. Every attempt was made to design each project in order to collect the type of data required to address the hypotheses listed in the Interim Report. However, due to many unforeseen variables many modifications to original plans were made.

The details of these changes are noted in the section of this report summarizing each project.

It should be noted that modifications to original research and evaluation studies, based on data and experience, were originally described as highly probable in the project proposal. This is especially true given the rapid growth and change which has taken place at Athabasca University over the last three years. Changes in university policy affecting both students and staff often have dramatic and long-lasting effects on the independent variables of interest in any research and evaluation project. REDEAL attempted to stay closely in tune with such developments in order to make adjustments to procedures and design necessary to accomodate such change.

For the most part, detailed data analysis and the preparation of reports on REDEAL efforts was impossible for several months after the implementation of each project. Although it is generally the case that naturalistic and non-obtrusive data collection is at the mercy of the organism being monitored, such data collection of adult learners at Athabasca University was also at the mercy of university policies which tend to have a direct effect on the speed of individual participation in university courses. This is especially the case for learners who either never got started in courses, but remain registered, and those who go at a pace much slower than the average successful learner. Data collection efforts must await the responses of learners in every category, and in some courses that means waiting for more than one year to determine the amount

and/or quality of work for an individual learner.

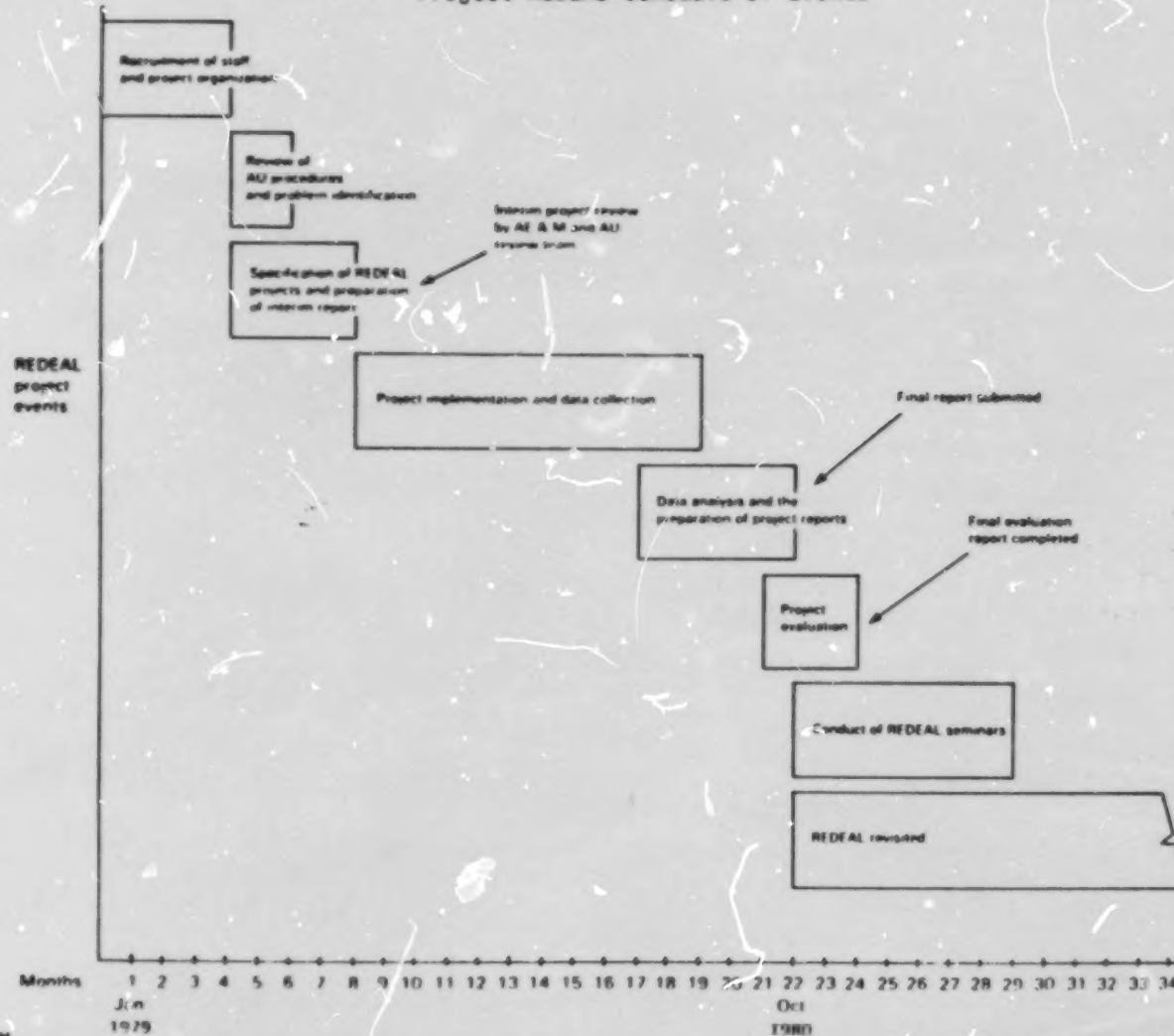
The REDEAL project also concerned itself with an evaluation of the entire project and its impact on Athabasca University. This evaluation was organized to meet the general evaluation plan described in the Interim Report as modified by discussion between REDEAL and the project review team. The time factor again plays a significant role in the evaluation phase of the project. The evaluation report in this document reflects only a proportion of the total evaluation effort. Project evaluation questions that address the impact of REDEAL on the university must remain unanswered until the university has had the opportunity to experience the impact of work completed by the "official" end of the project. The time frame in Figure 1, therefore describes an evaluation phase which begins prior to the October 31, 1980 deadline date for REDEAL, but continues for two months past this date. This is important in order to ensure such an evaluation will take place.

The conduct of REDEAL seminars shown in Figure 1 is an attempt by the REDEAL team to disseminate to the Athabasca University community the results, conclusions, and discussion of REDEAL projects (see Implementation Plan section of this document). The REDEAL staff feel such activity would greatly enhance the probability that the university would more carefully understand the REDEAL efforts and their implications for Athabasca University. Moreover, the schedule of seminars could also become a rich catalyst for group problem-solving into the problems and phenomenon of distance education.

REDEAL Revisited represents an Athabasca University-sponsored project aimed at better understanding the adult learner and their needs in distance education. Much of the activity tentatively planned for REDEAL Revisited will come directly out of the work completed during REDEAL. However, much of the activity planned for REDEAL Revisited shares only in the research and evaluation spirit of REDEAL and may be viewed as an independent attempt to evaluate the phenomenon of distance education from new and unique perspectives.

Figure 1

Project REDEAL Schedule of Events



The Organization of the Final Report

This report is a summary of the many project efforts which together represent REDEAL. The information contained in this report represents only the end result of 22 months of research and evaluation effort. Efforts in establishing funding for REDEAL, hiring staff, planning projects, setting up offices, writing computer programs, completing the REDEAL interim report (REDEAL Technical Report # 1), and many other activities occurred before this report was written. In addition, many efforts directly related to REDEAL will continue to occur after this report is submitted.

The final report for REDEAL is actually a series of reports. However, for ease of review of REDEAL activity, this report provides a brief summary of all REDEAL projects. The appendix of this report is comprised of the complete project reports, and additional research and technical reports completed during the last 22 months. Therefore, this report serves as a guide or introduction to each REDEAL project, many of which could be expanded into a large scale project.

The activity of REDEAL can be broken down into two major areas. First, REDEAL engaged in research and evaluation activity which provided "background information" useful in the total REDEAL effort. The first section of the summary of REDEAL projects presents brief description of the projects in the background information area. They include:

- a) Distance Education From the Learner's Perspective:
The Results of Individual Learner Tracking at Athabasca University.
- b) The Measurement of Attrition and Completion in Distance Learning Courses

- c) Interface with the Host Institution, Athabasca University
- d) A Comparison Between Paced Package and Home Study Courses
With Respect to Completion Data

The importance of the projects in the background information area cannot be underemphasized. Without engaging in this activity it is highly doubtful whether the individual projects described in the next section of this report would have been possible.

The second part of the summary of REDEAL projects presents brief summaries of all REDEAL individual projects. As a result of discussions of the REDEAL interim report (REDEAL Technical Report # 1) with the REDEAL review team, a list of individual projects was produced. The individual project summaries describe the work done on each of those projects. As was noted above, the complete report for each individual project is contained in the appendix of this report.²

The summaries of individual projects also attempt to follow the guidelines for presentation of research and evaluation findings agreed to at the time of the REDEAL interim report. That is, the summaries attempt to address the hypothesis identified in the interim report, indicate what hypotheses were not evaluated, and describe the outcomes obtained. Readers interested in the details of the research and/or evaluation design, sample sizes, learner characteristics, the courses used for research and evaluation, and other related questions should consult the complete report relevant to their interest.

Following the summary of REDEAL projects is a description of the REDEAL implementation plan. This section describes the types of activities REDEAL is sponsoring or encouraging in an effort to integrate the findings into the mainstream of Athabasca University.

Part I of the Evaluation of REDEAL follows the implementation plan. The Part I Evaluation is an attempt to answer as many of the evaluation questions identified during the interim report review of REDEAL as possible. It includes input from the REDEAL team and a brief evaluation report by Dr. John S. Daniel, past Vice-President of Learning Services at Athabasca University.

Part II of the REDEAL Evaluation will not be available until late December 1980. Evaluation Consultant Ltd. have been contracted to complete this evaluation which focuses on the impact REDEAL has had on Athabasca University, in addition to other evaluative concerns. This report will be published as REDEAL Technical Report #5.

The next section of this report discusses the adult learner motivational model presented by REDEAL at the interim project review phase. Concerns over the validity and usefulness of this model are discussed. An attempt to identify the relative contributions of each component of the model to the overall picture of adult learner motivation is also presented.

Summaries of REDEAL Background Information
Projects

Distance Education From the Learner's Perspective:
The Results of Individual Learner Tracking at Athabasca University
(A Summary)

In an effort to form baseline data and information on the activity of learners participating in courses offered by Athabasca University, an individual learner tracking study was initiated. A random selection of learners submitted weekly forms indicating their level of activity in courses, their motivational level, and the amount of contact they had had with the institution during the week. The results indicate that course completers studied more hours and were more highly motivated than non-completers. Motivation rating dropped for both completers and non-completers as the course progressed but showed increases both during the examination process and when contact with tutors was made. A discussion regarding the results of several hypotheses is included along with a general discussion of the implications these results have for improving distance education delivery systems.

The Measurement of Attrition and Completion in Distance Learning Courses
(A Summary)

High rates of learner attrition from courses continue to plague distance educational institutions. As educational researchers continue to examine the attrition/completion issue, problems in the measurement of the phenomenon emerge. The present paper discusses the measurement problem connected with attrition/completion. A variety of measurement techniques are reviewed. Work attempting to predict attrition rates using learner rate of progress in courses is also presented and discussed.

Interface With the Host Institution,
Athabasca University
(A Summary)

In an effort to increase lines of communication and better understand the problems facing Athabasca University, Project REDEAL team members interviewed Athabasca University professional staff members. The input from those interviews and the results of two seminars on the priority for research at Athabasca University helped form the basis of Project REDEAL research and evaluation studies. A questionnaire designed to more specifically rank and prioritize research needs for Athabasca University was also administered. The results indicate that REDEAL priorities are closely in line with the perceptions of the majority of Athabasca University staff regarding research needs for distance education. A discussion of the importance of project-institution relationships and interface is presented.

A Comparison Between Paced Package and Home Study Courses
With Respect to Completion Data
(A Summary)

Completion and cost data for six courses delivered in two different modes, home study and paced package, were analyzed. Students in a home study course received tutorial support via the telephone and progress through the course was at the discretion of each individual learner. Students in a paced package course received tutorial support via the classroom instructor and progress through the course was instructor determined. Results indicated that completion rates were substantially higher for paced package courses than for home study courses. In addition, estimated costs per student completion were lower for paced package courses, with one exception.

Summaries of REDEAL
Individual Projects

Investigating the Use of the Personalized System
of Instruction in Distance Education (A Summary)

The Personalized System of Instruction (PSI), as originally outlined by Keller (1968), contains four basic components:

- 1) Reliance on the written word for instructional purposes.
- 2) Self-pacing; students work at a rate commensurate with their own abilities and other demands on their time.
- 3) Mastery; progress through a course is contingent on performing at a specified criterion.
- 4) The use of tutors to help students progress through a course and provide immediate feedback on performance.

Since the instructional and delivery components of many distance education courses are quite similar to those found in the PSI model, it seems quite apparent that a natural extension of the use of PSI could be in the area of distance education. Thus, the purpose of the present study was to investigate the effects of using the PSI model to redesign and deliver a distance education course at Athabasca University. Introductory Accounting (216) was the course selected for the study.

Students (N = 95) who enrolled in the course from August 15 to November 14, 1978 served as the control group (C) as a basis for all experimental conditions. These students enrolled in the course prior to modifying the course to an "acceptable instructional baseline." After

- the modifications for an "acceptable instructional baseline" had been made, students (N = 121) were randomly assigned to one of five experimental conditions and one of three course tutors. These students enrolled in the revised version of the course from September 1 to November 14, 1979.

Students in the first experimental group (IB) took the instructional baseline version. Students in this group evaluated their own performance on each of the chapter's multiple-choice quizzes. Course progress and grades were not contingent on the performance of these quizzes. The entire course grade was determined by marks on the six credit exams. Students in this group had access to their tutor during regular tutor hours.

Students in the second experimental group (PSI-P) also received the instructional baseline materials, but they also took the course under the PSI model. That is, student performance was evaluated frequently by a multiple-choice quiz after each chapter. The student phoned his/her tutor to receive immediate feedback on the quiz, and progress to the next chapter quiz was contingent on performing at or above 80 percent on the previous quiz. In addition, the student's course grade was contingent on his/her performance on chapter quizzes. Approximately 40 percent of the course grade was determined by quiz scores. The remaining sixty percent was determined by marks on the six credit exams.

Students in the third experimental group (PSI-M) received the same course materials and followed the same procedures as the PSI-P group except feedback on the quizzes was delayed. That is, students mailed in their answers to each quiz to their tutor. The tutor phoned the student back after the quiz was marked and gave the student feedback and discussed the results.

Students in the fourth experimental group (Choice 1) had the choice of taking either the IB version of the course or the PSI-P version of the course. Students in the fifth experimental group (Choice 2) had the option of taking either the IB version of the course or the PSI-M version of the course.

The hypotheses, expected outcomes, and results of the present study are presented below. Since the number of students in the two choice groups are quite small, the expected outcomes were modified to exclude separate comparisons of these two groups. That is, once the students made their choice, their data were combined with the data of the students assigned to the condition they selected.

Hypothesis One

A course with an "acceptable instructional baseline" is more effective on all educational outcome measures than the same course without an "acceptable instructional baseline." Thus, students in the IB, PSI-P, and PSI-M groups will be expected to have faster rates of progress,

higher completion rates, higher credit exam marks, and rate the course higher than students in the control group (C). Additional data; the number, length, and type of tutor contact, tutor and coordinator evaluations, and data concerning costs; was collected whenever possible to determine if differences between groups existed.

The results of the comparisons made for hypothesis one are as follows:

- 1) Students in the IB, PSI-P, and PSI-M groups; the "acceptable instructional baseline" versions of the course progressed through the course at a faster rate than students in the control group (C), the version of the course that did not have an "acceptable instructional baseline." The differences between the "acceptable instructional baseline" versions of the course and the version of the course that did not have an "acceptable instructional baseline" varied considerably.
- 2) More students in the IB, PSI-P, and PSI-M groups completed the course than students in the control group based on predicted completion rates.
- 3) No differences were found between the four groups in regards to exam performance.
- 4) Student course ratings are not available at this time since very few students have actually completed the course.

- 5) The number, length, and type of tutor contact differ considerably between the three experimental groups. However, data was not available to make comparisons between the experimental groups and the control group.
- 6) Tutor and coordinator evaluations of the different versions of the course will be administered in January 1981 after all students have been enrolled in the course for at least one year.
- 7) Data related to costs of tutor phone contacts was analyzed for the three experimental groups but was not available for the control group. Substantial differences were found between the three experimental groups.

For a detailed description of the results related to hypothesis one, see REDEAL Research Report #1. For a general description of the findings for the three experimental groups, see the results under hypothesis two and three reported in this summary. In general, the hypothesis set out to be tested was supported on all measures for which data was collected except for exam performance.

Hypothesis Two

Immediate feedback is an important instructional and motivational component in distance education. Thus, students who received immediate feedback on chapter quizzes, group PSI-P, will progress through the course at a faster rate, will have higher completion rates, will receive higher

exam marks, and will rate the course higher than students who receive delayed feedback on their chapter quizzes (PSI-M). The additional comparisons that were made related to number, length, and type of contacts made between the tutor and student for the PSI-P and PSI-M groups. The results are briefly summarized below.

- 1) Students in the PSI-P group progress through the course to a greater degree than students in the PSI-M group. Students in the PSI-P group completed an average of 1.82 exams as compared to 1.03 exams for the PSI-M group. For a comparison of number of students passing each credit exam for each group see Figure 1 in REDEAL Research Report #1.
- 2) More students in the PSI-P group are predicted to complete the course than the PSI-M group. Based on the prediction formula, 26% of the students in the PSI-P group will complete as compared to 13% of the students in the PSI-M condition.
- 3) No differences were found in exam marks for the two groups.
- 4) Course ratings are not available at this time.
- 5) Students in the PSI-P group received or made an average of 1.5 phone calls per month as compared to .88 phone calls for students in the PSI-M condition. The average length of phone calls per month made between tutor and student was found to be approximately twice as great in the PSI-P condition than in the

PSI-M condition, 16.53 minutes per month as compared to 8.67 minutes per month. The slightly larger percentage of the phone calls in the PSI-P group, 76%, were found to be content-related than for the PSI-M group, 69%. Approximately twice as many calls were made for the purpose of checking in with the student in the PSI-M condition than in the PSI-P condition, 47% compared to 24%.

For a more detailed description of the results for hypothesis two see REDEAL Research Report #1. Again, the predicted outcomes were in the direction predicted except for exam marks.

Hypothesis Three

Since courses using PSI have an "acceptable instructional baseline", as well as additional components which have been shown to be instructionally effective, a course using PSI will be more effective on an educational outcome measures than the same course without all the additional PSI components. The comparisons that were made were between PSI-P and the other two experimental groups. Students in the PSI-P condition were expected to progress through the course at faster rate, have higher completion rates, receive higher credit exam marks, and rate the course higher than students in either the PSI-M group or the IB group. The PSI-M group was expected to out-perform the IB group on all the above measures as well. The results relating to hypothesis three are summarized below:

- 1) Students in the PSI-P group progressed through the course at a faster rate than the other two experimental groups. The average number of credit exams completed were 1.17 for the IB group, 1.82 for the PSI-P group, and 1.03 exams for the PSI-M group. Thus, the hypothesis was only partially supported.
- 2) The predicted completion rates for the three groups were 11% for the IB group, 26% for the PSI-P group, and 13% for the PSI-M group. Thus, the hypothesis was supported, however, the differences between IB and PSI-M were not as large as expected.
- 3) No differences were found on exam marks for the three groups. The hypothesis was, therefore, rejected.
- 4) Three times as many contacts per month were made between tutor and student in the PSI-P condition than in the IB condition and almost twice as many contacts per month in the PSI-M condition than in the IB condition. Thirty-nine percent of the phone calls were content-related for the IB group as compared to 76% for the PSI-P group and 69% for the PSI-M group. The average number of minutes per month spent on the phone was 5.31 minutes, 16.53 minutes, and 8.67 minutes for the IB, PSI-P and PSI-M groups respectively. The difference in cost of the different versions for long distance phone calls can thus be estimated using these data.

For a more detailed comparison of the three experimental groups, see REDEAL Research Report #1.

In summary, it does not appear that merely improving the instructional package of a distance education course will dramatically improve completion rates. The results suggest that the instructional design of a course must also incorporate systems that integrate the instructional components of a course with an effective delivery/management system. The results of the present study suggest that the PSI model provides the needed integration.

Since the generalization of the finding of the present study are quite limited, the author suggests that further studies should be carried out to test the effectiveness of the PSI model in other distance education courses. Some courses might prove to be more difficult to adapt to a PSI model and other methods might have to be developed to provide immediate feedback to students. In addition, methods to improve the existing model should be investigated. Strategies need to be developed that will increase the number of students completing a larger proportion of their studies. A more detailed discussion of the results are provided in REDEAL Research Report #1.

An Examination of Tutor Management Strategies for use in
Distance Education (A Summary)

The tutor has received considerable attention in the writings of those concerned with the development and practice of distance education (Baath & Wangdahl, 1976). Although the tutor has been described as having an important role in the motivation of the distance learner, there is a notable void in the amount of empirical information available to support such claims. Whether the tutor has any direct control over learner success (usually measured by course completion) remains, at least in the minds of some researchers, to be questionable.

The present study was an attempt to determine whether an incentive pay scheme which linked tutor compensation directly to learner performance would result in increased learner completion rates and performance in distance education courses at Athabasca University. Two tutors were put into a condition under which their entire financial compensation was determined by the rate the learners they were tutoring completed credits. A second group of tutors, serving the same courses, were used as a control group, and a third tutor was used as a special control to determine if a volunteer tutor would submit the same amount and quality of documentation required of the incentive pay scheme tutors.

The present study attempted to evaluate hypotheses listed in the Project REDEAL Interim Report (REDEAL Technical Report #1) as follows:

- a. Athabasca University tutors who are paid only when their individual learners obtain course credit will be more effective in keeping learners active and on schedule.

- b. Athabasca University tutors could prove to be the richest source of information on problem areas in course design and content if they were paid for submitting reports following a set format on learners who were behind schedule.

Both of the above hypotheses also had direct cost implications to the institution instituting such a scheme. Therefore, costing data was also collected and compared across groups to determine potential costs of such a system.

The results of this study indicate that learners assigned to the incentive pay scheme progressed at approximately the same rate as learners assigned to the control tutors. All other measures of performance were equal between all incentive pay scheme tutors and controls. However, the information submitted by incentive pay scheme tutors on learners who were taking longer than two months to complete a credit (i.e. behind schedule) was considerably more regular and of a higher quality than the information submitted by tutors volunteering to submit monthly reports. An analysis of this information revealed that tutors indicated a majority of the learners' problems were problems that they could not affect directly (i.e. personal problems) unless the university withdrew the learners from the course or extended their time for study in the course.

The analysis of cost data indicated that, for the purposes of the present study, the incentive pay scheme system did not cost more than the standard Athabasca University tutor pay system (\$7.50 per learner per month enrolled). However, had completion rates for the incentive pay scheme tutors been higher, as hypothesized, the

resulting costs also would have been proportionally higher.

The results of this experiment tend to reject the first hypothesis that an incentive pay scheme for tutors will directly impact learner credit completion rates. This study suggests that tutors have little control over a large proportion of learners with respect to credit completion. However, as put forth in hypothesis two, the tutors used in this study did become a rich source of information regarding learners behind schedule. The monthly reporting system used in this study provided data on individual learners on a regular basis and tended to confirm the second hypothesis. However, it is likely that the suggestions made by tutors regarding what could be done to assist learners behind schedule would not improve overall course completion rates (unless the learners withdrawn from the courses were not included in the total number of learners enrolled).

In general, this experiment points to the importance of the role of research and evaluation in helping to understand the issues surrounding tutoring in distance education. Future research and evaluation efforts into tutoring should examine the tutoring management issues and the relationship between tutor management, learner management, and institutional data collection on individual learners.

The incentive pay scheme tested in this study revealed that such a system has a clear advantage over the "flat rate" pay scheme with respect to information available on individual learners. A refinement of university policies addressing learners behind schedule would be possible if the type and volume of information required to carry out

such an adjustment was available. Moreover, the regularity of reporting by tutors on learners is also a key issue when the volume of information to be obtained is considered. It would be possible to computerize the information obtained from tutors and enter that information into a modified computer managed instructional system (e.g. PLATO, CMI). Although the present study did not examine differential treatments for learners behind schedule, future research efforts should consider testing treatment effects (reminder letters, phone calls from coordinators, etc.) as a possible means of improving learner completion rates and progress rates for learners behind schedule.

Exploring the Effects of Peer Tutoring in Distance Education
(A Summary)

The use of peer tutors has proven to be an effective means of dealing with a variety of learning problems in higher education. Although a large majority of the research into peer tutoring has been directly connected with the Personalized System of Instruction (peer tutors are referred to as proctors in this literature), the peer tutor has also been found to be effective in courses not designed along PSI guidelines and with learners at large.

The apparent success with peer tutoring in a variety of higher educational contexts suggests that the peer tutoring concept may have utility in the distance education context. The present investigation was an attempt to evaluate the effects of peer tutors working in the distance educational environment at Athabasca University. As originally proposed (see REDEAL Technical Report #1), the following hypothesis was written to guide this investigation:

Learners who have recently completed an Athabasca University course successfully are in a good position to serve as tutors for new learners in that same course, due to their familiarity with the course materials and procedures, and their understanding of the learner's position in the course.

Because of institutional problems surrounding the possible research into peer tutoring (described in more detail in the Appendices), only a

single peer tutor was employed in this study. That tutor was randomly assigned 10 students enrolled in an introductory English literature course at Athabasca University, beginning in October, 1979, and continuing through May, 1980. The peer tutor selected had completed the course she was tutoring with above average marks and had previously completed other Athabasca University courses successfully.

The peer tutor was expected to perform the same duties as other tutors working in the English literature course. However, the course coordinator provided back-up marking of essay assignments in order to ensure they were being marked fairly and completely. The peer tutor was paid a small honorarium for participating in the study, and with that exception was treated the same as other tutors at Athabasca University.

Because of the limited nature of this study the data are difficult to interpret with respect to the hypothesis. The peer tutor was as effective as other tutors as measured by the percentage of learners taking exams, average marks on exams, and average time to completion of exams. The peer tutor appeared to be capable of performing all academic, administrative, and interpersonal requirements of tutoring throughout the experiment. The difficulties reported as problematic by the peer tutor did not differ from difficulties reported by other tutors.

Of even more interest than the behaviour and results obtained from the peer tutor, were the reactions to peer tutoring research made by members of the Athabasca University staff. Concerns about the possibility of peer tutoring being viewed by university administration as more cost-effective and replacing the existing tutoring system, a general concern for the preservation of the existing tutoring system,

doubts that peer tutoring could be proven effective, and concern that the use of peer tutors would discredit the university were expressed.

It should be noted that the level of concern expressed by Athabasca University staff on the peer tutoring issue, especially the concerns expressed by the Social Science unit, were strong enough to prevent a comprehensive peer tutoring program from being initiated. Such results would strongly support the notion that tutoring "is here to stay". Moreover, it is clear that many Athabasca University staff view the academic qualification of the existing tutor contingent as vital to the university. Attempts to explore alternate methods of providing tutorial assistance to learners, independent of the potential success of the methods, became troublesome issues for many staff members.

Research and Evaluation of Tutor Skills Program
(A Summary)

A research and development program designed to study many aspects of the skills required by the telephone tutors in distance education was initiated between 1979 and 1980 at Athabasca University. The major purposes of this program were to: a) analyze tutor skills, focussing on the interpersonal skills necessary to be effective tutors; b) develop a training package and accompanying workshop to train tutors in the appropriate interpersonal skills; c) measure baseline levels of interpersonal performance in the existing tutor population at Athabasca University; d) engage in training for volunteer tutors, and; e) measure effectiveness on the following dimensions: i) change in tutor behaviour; ii) generalization of tutor behaviour to the live tutoring situation; iii) the effect on learner behaviour as a result of the change in interpersonal skills.

The results obtained clearly indicate that Athabasca University tutors are in need of interpersonal skills training and that they are interested in the prospect of learning new relevant interpersonal skills. Measures of effectiveness taken both before and after workshop training indicate that the tutors participating in the training program view it positively; the training is effective in producing increases in the interpersonal behaviour indices targeted in the program and that these gains do transfer to the live tutoring situation. Although the gains obtained

in tutor interpersonal skills represent an improvement in the quality of verbal interaction between tutors and students, the levels of functioning are still short of effective levels indicated in previous research.

In order to give more specific information on the effect of tutor interpersonal skills on learner behaviour, two separate experimental programs were initiated. Experiment 1 examined the interpersonal skills of three tutors to determine the level of functioning of each tutor and the possible effect of that level of functioning on student behaviour. A transcript tape analysis showed that all three tutors were quite low in the facilitative conditions, however the data indicated that more open-ended questioning on the part of the tutor led to a better progress rate on the part of the student. The second study examined the interpersonal skill level of two tutors who had engaged in interpersonal skills training of the type similar to the program offered at Athabasca University. The functioning of these tutors, as examined by the tape analysis and the resulting learner performance data were compared. The results indicate that a higher functioning tutor was more effective on all student outcome measures. This evidence provides support for the need for tutor interpersonal skills training and its possible effect on learner performance. A discussion of the results and their implications for the design of a tutor skills training program at Athabasca University is presented with recommended procedures for providing that training offered.

The Effects of Computer Generated Schedules on the
Performance of Athabasca University Learners (A Summary)

High attrition rates are often a problem associated with self-paced instructional systems. This phenomena is found to occur not only in traditional college and university self-paced courses but also in open university self-paced courses (Born and Whelan, 1973; Donehower, 1968; Harrington, 1977; and Glick and Semb, 1978). The literature suggests that the lack and management of time are major factors contributing to the high attrition rates in open university home-study courses (Bradley and Lehman, 1975; Carp, Peterson, and Roelfs, 1973; DeGoede and Hoksbergen, 1978; and McIntosh, 1978). Several educators (Anderson and Tippy, 1971; MacKenzie, Christensen, and Rigby, 1968; and Tosti and Wilson, 1972) have suggested developing strategies for managing student activity; such as, an instructional management system, pacing schedules, and time management, as possible solutions for the attrition problem.

During the academic year 1978-1979, Athabasca University undertook a project to develop and test a computer-based system designed to generate personal course-related study schedules for learners enrolled in two of its courses. (For a detailed description of the computer-based system and logistics of the project, see the Appendix of the final report, REDEAL RESEARCH REPORT #5.) Since no formal evaluation of the project was

- undertaken, Project REDEAL conducted a post-hoc evaluation of the project as one of its activities. The two courses used in the project were Introductory Interpersonal Communication (229) and Motivation and Management (319). Learners enrolled in these courses were allowed to choose whether they wanted to receive a study schedule or not. Choice and completion data from fifty-two learners enrolled in Course 229 and thirty-four learners in Course 319 were analyzed. In addition, data was collected from interviews conducted with the learners' tutors. The hypotheses set out to be tested are listed below.

Hypothesis One:

Learners who receive personal schedules which indicate the specific date for the completion of course related activities are more likely to keep pace according to that schedule than learners not supplied with such information.

Hypothesis Two:

A computer generated personal schedule system will allow learners to "pace" themselves and by doing so put individuals much more in touch with their own personal time requirements resulting in a more realistic approach to course related activities (e.g. higher completion rates for scheduled learners).

Hypothesis One could not be tested due to a lack of data. Tutors did not keep records of when learners completed specific course tasks nor did the tutors know whether or not the tasks were completed according to schedule. Therefore, it was impossible to tell whether or not learner progress through a course is affected by following a specified schedule. This is unfortunate since rate of progress through a course has been reported to be related to course completion (Donehower, 1978).

Based on the analysis of completion data, Hypothesis Two was rejected. Completion rates were found to be lower for those learners who received study schedules than for those learners who did not receive study schedules. It should be pointed out, however, that the hypothesis was not adequately tested because of design and implementation problems encountered in the project. First, it is not appropriate to compare completion rates for learners in the schedule and no schedule condition since the majority of students in the schedule condition did not use the schedules. Another problem is that, due to the voluntary selection procedure, it is quite possible that learners choosing the no schedule condition had a much higher probability of completing the course than learners who choose the schedule condition, and that the study schedules were not a strong enough variable to overcome the differences created

by the initial selection procedure. Comparisons between learners receiving schedules and using them, learners receiving schedules and not using them, and learners not receiving schedules, are needed before firm conclusions can be made in regards to the effect of schedules on learner completion rates. Unfortunately, these comparisons could not be made because the tutors were unable to provide the relevant data.

Since no firm conclusions can be drawn from this evaluation effort, the authors would suggest that further studies into the use of individual study schedules be instigated. This suggestion is based on the fact that the majority of learners chose to receive study schedules, which seems to indicate that the learners have a need for assistance in planning their course activities. The computer-based system evaluated in this report, however, did not appear to meet this need. The reasons for its "failure" could be numerous. Possible explanations include: 1) learners receiving the schedules too late; 2) tutor's reluctance to discuss schedules with learners; 3) tutor's lack of training to deal with learner excuses and renegotiate schedules; 4) lack of flexibility in schedules to meet individual needs; 5) estimates of time to complete tasks were in error; and 6) the lack of contingencies to back up schedules.

Before the hypotheses in the present report can be adequately tested, these problems must be corrected and a careful design and evaluation plan must be put into place.

Seminars as an Instructional Strategy in Distance Education

(A Summary)

The problem which most methodologies address in distance or open education is how best to convey the knowledge and skills of an area of study commensurate with needs, wishes, and abilities of adult learners who through preference or happenstance (e.g. geographic factors, time, expense) choose to pursue higher education outside the walls of the traditional university. This paper describes the preliminary findings of a research study concerned with the effect of seminars on the success of adult learners in an open university. The study addressed issues of losses and gains, particularly with respect to motivation, in delivering periodic seminars within a home-based course of study. Furthermore, the study looked at which learners were attracted to seminars and how this related to learner performance in the course.

MAJOR HYPOTHESES

The set of hypotheses described evolved as a result of testing various assumptions about the setting in which the research took place and the participants involved.

Course-Related Motivational Hypotheses. Based on the assumption that group contact seminars are reinforcing events, a contingent seminar group (CSG) should exhibit a significantly faster rate of progress

and a higher rate of completion in the course than either a non-contingent seminar group (NCSG) or a no-seminar group (NSG, i.e. a control group).

First Revisions

Psychology 206

Those participants attending seminars (seminar group) should have a significantly higher completion rate and faster rate of progress through the course than the no-seminar control group.

Administration 232

Those participants attending seminars should have a significantly higher course completion rate and a faster rate of progress through the course than non-attending learners who received invitations.

Second Revisions

Psychology 206

Those participants attending seminars should have a significantly higher course completion rate and a faster rate of progress through the course than non-attending learners who received invitations.

Attendance Hypothesis

Learners can be attracted to a seminar when attendance is not obligatory and when material covered in the seminar is not given credit.

METHOD

Three seminars were held at periodic intervals over the length of

the course for each of two courses: an introductory psychology course and an introductory course on administrative principles. Under one set of conditions learners were assigned randomly to one of three groups, a contingent seminar group (learners were required to meet an eligibility requirement based on course performance in order to attend); a non-contingent seminar group (with no eligibility requirement), and; a no-seminar control group (learners were not invited). In the second condition, learners were randomly assigned to one of two groups; the non-contingent seminar group and the control group. In the third condition, all new learners were invited to attend seminars.

Participants in the research were part-time adult learners in Alberta who elected to do the course in a home-study mode. Most were between the ages of 25 and 34, were taking the course for career-related reasons and were taking the course through the open university for a wide variety of reasons. There was a slightly higher proportion of females to males. The largest proportion of students resided in the greater Edmonton area and almost a third resided in rural localities.

Three of the six seminars for both courses focussed on the course-enrichment activities, the remaining three focussed on course-specific "how-to's".

RESULTS

In general, for those hypotheses that could be adequately tested, there were small but consistent differences in favor of seminar attenders with respect to course completion, rate of progress through the course, academic

performance, and in particular, completion rate of the first credit block.

Data supported the hypotheses with respect to contingent and non-contingent conditions, but samples were too small to be considered adequate for generalizations.

Data supported the hypotheses concerning seminar-related motivation and attendance.

CONCLUSION

The preliminary data from this study indicated that those who attended seminars tended to do better in terms of course-related performance on a number of dimensions than those who did not attend seminars. Results from this study were strictly correlational and it was not possible to determine whether seminars attracted higher performance learners or whether seminars contributed to higher performance. There was very little support for the contention that (isolated) learners in the open higher education context would attend seminars on any pretext for socially-related reasons. However, the results did indicate that if seminars can be made relevant, up to one-third of those invited may attend. Thus, seminars are one way instructors can tailor a standard home-based course package to the needs and concerns of the changing and diverse student body.

Television and Pacing

Project REDEAL attempted to gather, analyze, and interact available data relevant to the effects of regularly scheduled television programs on learner progress in courses (see REDEAL Technical Report #1). As was discussed in the Interim Report, this project was not originally initiated by REDEAL, but put into place prior to the REDEAL project.

After extensive analysis and review of the courses using television and all available data, this evaluation effort was discontinued. Stated simply, the volume and nature of available information was not found to be complete or relevant enough to warrant further analysis. Therefore, a complete report on this issue is not possible at this time.

Examining The Effects of a Behavioural Self-Control Package on the
Behaviour of the Distance Learner (A Summary)

Learner self-management strategies, the most common being those in the behavioural self-management area (Fox, 1962), may be defined as the manipulation of environmental stimuli by an individual in order to effect changes in his/her own behaviour. Behavioural self-management strategies are becoming increasingly popular due to their relative efficiency with the client carrying out much of the treatment program without outside assistance. Perhaps more important, however, is the fact that behavioural self-management strategies tend to maximize the client's (in this case, the learner's) sense of self-control over his/her own behaviour, as opposed to such control being located in an outside agent. Recent developments in psychology (e.g. Rotter's Focus of Control Theory, 1966) indicate that perceiving one's own behaviour as being to a large extent self-directed is important for maintaining high levels of motivation and performance. Such thinking is also highly consistent with current trends in adult learning theory (e.g. Knowles, 1975).

Aside from the obvious theoretical importance of self-management, it is often pointed to as a major problem with the implementation of adult learning programs. Many workers in adult learning, especially those connected with distance-learning programs, speculate that a significant proportion of adult learners have difficulty in courses because:

- a. They do not have the ability to manage their study time in relationship to non-academic events;
- b. they have poor study skills which interfere with their ability to process, encode, and retrieve information;
- c. their motivation to participate in educational programs cannot be channelled into actual learning activity.

Both of the above concerns provided the basis for implementation of the REDEAL learner self-management research and evaluation project. The original intent of that project was to take a comprehensive look at learner self-management in the following way:

- a. assess Athabasca University learner characteristics with respect to baseline measures of self-management skills, learning strategies, and motivational orientation by administering Biggs (1978) Study Process Questionnaire to a sample of learners, both at Athabasca University and the University of Alberta;
- b. analyze the results of the Study Process Questionnaire to determine the content and structure of a self-management study skills package suitable to the skills required of Athabasca University learners;
- c. test the self-management/study skills package with a sample of Athabasca University learners in comparison to a randomly selected sample of learners not obtaining such training;

- d. carefully measure the success (if any) of the package on variables such as study time, self-reported motivation, attrition rates, rate of progress in courses, and examination performance.

The goal of the above research and evaluation program was to determine information in relationship to the following hypotheses:

Hypothesis One:

Athabasca University learners tend to score higher on intrinsic motivation (learning itself is the prime goal), while University of Alberta students will score higher on extrinsic motivation (learning is merely a means to some goal entirely separate from learning itself) and need-achievement (excellent performance, high grades, and resultant status as a goal) as measured by Biggs Questionnaire.

Hypothesis Two:

The most effective Athabasca University learners will be those who are either highly intrinsically motivated and/or who have good self-management skills. In contrast, performance by University of Alberta learners will not correlate as strongly with the possession of such characteristics.

Hypothesis Three:

Athabasca University learners who are experiencing motivational difficulties in their studies will benefit from self-management/study skills training versus relevant control groups who do not receive such training.

Results and Conclusions

Although the theoretical and practical importance of self-management, especially its importance in distance education, should not be ignored, the problems surrounding its careful investigation are not insignificant. In attempting to address the self-management problems, REDEAL was only capable of generating information relevant to the third hypothesis (concerned with the benefits to learners of self-management training). The report in Appendix gives the details of this investigation.

In summary, an attempt was made to provide self-management/study skills training to a sample of Athabasca University learners using a self-management/study skills training package. The results were disappointing for the following reasons:

- a. very few learners completed the package and participated in the activity required;
- b. even learners expressing a keen interest in the self-management training program did not engage in the activity required of the program and therefore only very limited amounts of data were obtained;
- c. the quality of the self-management training package and its effect on learners was impossible to determine because of the limited participation rates;

- d. the limited time and resources of REDEAL, coupled with the limited availability of the principal investigator for the learner self-management project, did not allow for a second data collection effort to take place.

Because of the above results, detailed input to the hypotheses is made impossible. However, the lack of volunteer participation on the part of Athabasca University learners points out some of the difficulties in implementing any form of training of this nature. The lack of apparent motivation to participate in self-management training (even by learners expressing verbal interest and excitement about the project while attending a workshop with the author present) provides an interesting data base. The expression of need by learners may not represent the type or amount of motivation needed to engage in behaviour relevant to meeting that need. This phenomenon, not unlike the phenomenon relevant to distance learner course attrition (i.e. learners expressing a need for courses, but a majority not engaging in the behaviour required for completion) must be investigated further. Moreover, standard methods and measures of learner self-management behaviour may need re-conceptualization if they are to be effective in the distance educational setting.

Factors Effecting Learner Motivation in Distance Education:
The Interaction Between Learner Attributes and Learner Course Performance
(A Summary)

At the time of the interim report (August, 1979) REDEAL indicated that an analysis of existing Athabasca University courses, existing learner performance measures, and learner attributes would be completed by the end of the project. In order to guide this work, a series of 13 hypotheses were written which attempted to describe possible relationships between the above variables. This report summarizes the changes and additions to those variables and a brief summary of the results obtained.

The complete list of hypotheses used for this analysis is shown below:

- a) Learners completing courses will have higher examination marks than learners not completing courses.
- b) The sex of the learner will have no bearing on completion probability.
- c) The age of the learner will have no bearing on completion probability.
- d) Learners applying to Athabasca University for advanced credit for courses completed at other institutions prior to enrollment at Athabasca University will have higher completion rates.
- e) Learners with prior post-secondary educational experience will have higher completion rates.

- f) Learners who are also enrolled in programs outside of Athabasca University will have higher completion rates.
- g) Learners who indicate that they prefer to study on their own rather than in a group or a combination of situations will have higher completion rates.
- h) Learners indicating that they are enrolling for career reasons will have higher completion rates.
- i) Learners indicating that they anticipate having more than 10 hours available each week for studying will have higher completion rates.
- j) The majority of learners completing courses will take longer than the amount of time available using the Athabasca University policy of two months per credit (i.e. 180 days for three credits and 368 days for six credits).
- k) Learners who enrolled in Athabasca University degree programs will have higher completion rates than learners not specifying a degree program.
- l) Learners indicating that they are enrolled at Athabasca University because of distance from existing institutions as their major problem will have higher completion rates than learners enrolled for time, financial, or educational reasons.
- m) Learners successfully completing a course at Athabasca University will have higher completion rates in a subsequent course.

- n) Learners who enroll in more than one course at Athabasca University will have a higher completion rate.

The above hypotheses reflect changes to the original list included in the interim report (REDEAL Technical Report #1). The changes are as follows:

- a) The following hypotheses were deleted from the list:
 - i the first three on the original list (i.e. 1a, 1b, and 1c)
 - ii the second hypotheses from the second part of the list (i.e. 2b)
 - iii the third hypotheses from the third part of the list (i.e. 3c)
- b) The following hypotheses were modified as follows:
 - i the third hypotheses in the second part (3c) was modified to include measures of completion rather than learner rate of progress.
 - ii hypotheses 7b (hypothesis number 7 in the second part) was modified to include only an analysis of completion rates for learners indicating reasons for attending Athabasca University. Career reasons were not included under this hypothesis but dealt with in hypothesis 1 above.
 - iii the second hypothesis in the third part (2c) was modified to include an analysis of the total time taken for course completion instead of the prior indication that rate of progress on the first credit block would be used for predicting course completion.

c) The following hypotheses were added (see listing above):

i hypotheses b, c, d, f, and m were added to the list.

In summary, the following hypotheses tended to be confirmed from the data obtained: hypotheses a, c, d, e, j, l, and m were supported by the data. The following hypotheses tended not to be confirmed by the data obtained: hypotheses b, f, g, h, i, k, and n were not supported by the data. For a more detailed explanation of the results and interpretation of these results, refer to REDEAL Research Report #9.

In general, the results of this investigation have clearly pointed out the following: first analyzing course materials to determine their instructional validity is difficult, if not impossible. The range of materials, content, and designs used almost defies description. However, it is clear that the majority of course materials involve a considerable amount of prose, most of which was not written specifically for the distance delivered package. Second, although it was possible to identify and analyze learner attributes using the Athabasca University student information system, refinement in the types of learner attributes obtained, the way in which they are obtained, and the way in which they are coded and stored must occur. Third, some refinement in the type of learner performance data analyzed must also occur. This is especially relevant for data indicating rate of progress. Finally, more convenient methods of analyzing large numbers of learners across courses should be developed. Although the REDEAL approach to this analysis worked, it would be possible to design systems which made that job easier and less time consuming.

The results of this project also point out the large problem Athabasca University is having with learner attrition and rate of progress in courses. Moreover, it is clear from this analysis that the problem cuts across various types of people and would not be solved by increasing the intellectual sophistication of the learner population. It is also clear that motivational problems are not unidimensional. That is, it is likely that many factors come together to effect the motivation of a given individual, even though certain factors appear to be generally useful in predicting success.

Implementation Plan

In addition to the important need to collect empirical information regarding REDEAL projects, there is also an important need to communicate and disseminate that information to persons both within and outside of Athabasca University. The implementation plan described below represents a model for such information distribution and communication.

The implementation plan is based upon three major premises. They are:

- 1) That research and technical reports form the basis of communication between REDEAL efforts and interested outside parties. Such reports contain the necessary technical and empirical information required in order to begin discussing issues of concern in the study of adult learner management and motivation in distance education.
- 2) That interested parties, especially those directly connected with ongoing Athabasca University activities, should have the opportunity to interact with REDEAL staff members in a seminar/workshop format to discuss and better understand the work completed on each major REDEAL project.
- 3) That in order for the efforts of REDEAL to generalize and become important to the growth and development of Athabasca University, REDEAL staff members should be integrated into the mainstream Athabasca University community as consultants and workers as soon as possible. Such integration would provide continuity to REDEAL efforts, allow for the collection of more data in

important areas, and continually increase the probability that research and evaluation efforts, similar to those undertaken by the REDEAL project, would continue within Athabasca University.

In order to allow for the above premises to be fulfilled, the following implementation plan is recommended and has already been put into action:

Research and Technical Report Series

REDEAL has begun to distribute documentation relevant to individual REDEAL projects under two separate report series covers. The research report series (light blue covers entitled REDEAL Research Report Series) includes all documentation, prepared in research publication style and format, describing REDEAL research and evaluation efforts. Each research document contains relevant information regarding the design, rationale, findings, and conclusions reached for each project. Bibliographic information and authorship are also included with each report. Research report abstracts form the basis and body of the REDEAL final report with the complete research report included in the appendix as an optional addition to the final report. Individual research reports can be selected and obtained by interested parties (i.e. those requesting reprints or REDEAL report documentation) from a complete listing of research reports with accompanying abstracts. All Athabasca University professional staff members will be sent the complete list of REDEAL reports and accompanying abstracts and they can select those research reports they wish to review in more detail.

The REDEAL technical report series (tan covers entitled REDEAL Technical Report Series) includes all REDEAL efforts and documentation which are not of a research or evaluation nature. Project interim and final reports, position papers, etc. are included in this series. All technical reports will also contain brief abstracts from which interested parties can determine interest and request complete reports if they wish to examine the information in more detail. The same distribution and dissemination system will be used for the technical report series as was described above for the research report series.

Persons outside of Athabasca University can obtain both research and technical report series documentation upon request. Persons requesting information on REDEAL and who do not specify particular reports will be sent a complete listing of reports with accompanying abstracts. They need only to check off the reports they wish to receive, and return the attached form to REDEAL to receive documentation.

REDEAL Seminar Series

Beginning in mid-November, 1980, REDEAL will be sponsoring a series of seminars/workshops for Athabasca University staff. These seminars will be directed toward the major projects within REDEAL in an attempt to familiarize all Athabasca University professionals with the work REDEAL has completed and the details of the information collected. However, the focus of each seminar will be on the implications the particular project has for the improvement of learner management and motivation in the Athabasca University context. The data collected will

only serve as the underlying basis for discussion of new procedures and methods potentially useful for Athabasca University.

As tentatively planned, each seminar will last a minimum of three hours and will accomodate approximately 20 - 25 people. Persons attending the seminar will be given copies of relevant REDEAL reports and be provided with additional information relevant to the seminar. Each seminar will be directed and led by the REDEAL staff member most directly connected with the topic.

The following list indicates the topics tentatively identified for upcoming seminars:

- a. Looking more closely at attrition/completion at Athabasca University (17/11/80)
- b. The Personalized System of Instruction in distance education (19/11/80)
- c. Tutor skills, tutor management, and the tutor role at Athabasca University
- d. Individualized instruction under control: A design for distance education
- e. Pacing: its implication and effects
- f. Distance learners working in groups: issues and answers
- g. When you open up distance education who enrolls and who has success?

Integration of REDEAL Staff into Athabasca University

The success of any research and evaluation projected directed toward improving an existing system depends largely upon how well integrated that project is into the host institution. In an effort to increase

integration, and therefore maximize communication and utilization of REDEAL efforts, every attempt was made during REDEAL to make REDEAL staff members feel, and be perceived, as Athabasca University employees and contributors. The following types of activities highlight attempts to maximize the above integration:

- a. Listing all REDEAL staff as university employees and allowing them to participate in university activities, both professional and social.
- b. Housing REDEAL staff in offices in the same building as full-time academic staff (i.e. Learning Services employees). REDEAL, although occupying several offices over the 22-month period, was always in the Athabasca University East building.
- c. Encouraging REDEAL staff to apply for, and accept, regular continuing appointment at Athabasca University when positions of interest and relevance to them became available. Geoff Peruniak and Bob Spencer are currently full-time Athabasca University employees with regular continuing positions (Geoff beginning in January, 1980 and Bob in November, 1980). This was done in a way which still allowed each professional to remain actively involved with REDEAL.
- d. Providing a minimum level of consulting support to functions within Athabasca University from time to time. REDEAL has voluntarily taken on certain assignments directly related to the problem of adult learner

motivation and management in an effort to demonstrate the importance of Research and Evaluation activity in normal university functions. Although such "outside" activity, if not under control, can detract from project related activity, it can also serve an important communication and integration function. In the REDEAL case, a limited amount of such activity throughout the project has strengthened REDEAL/Athabasca University relationships and fostered communication between REDEAL and almost every unit in the institution.

REDEAL Revisited

Another important component of effective implementation of REDEAL efforts involves a continuation of the types of activity, in the research and evaluation sense, that REDEAL represents. Although official REDEAL funding ends with the publication of the final report, every attempt has been made, and will continue to be made, to continue REDEAL-type efforts.

One specific research and evaluation effort which follows directly from REDEAL is being referred to as REDEAL Revisited. REDEAL Revisited is planned as an Athabasca University-sponsored activity (although outside funds will be sought) spanning 26 months. The goal of REDEAL Revisited will be to continue to explore methods of distance design and delivery which maximize learner success. REDEAL Revisited will attempt to capitalize upon the work already completed by REDEAL and expand upon that work in two ways:

- a. Getting more detailed information of the type collected during REDEAL.
- b. Exploring new avenues of motivating and managing distance learners using a research and evaluation approach.

Although REDEAL Revisited is one of the most obvious examples of the effects of REDEAL on Athabasca University, other university-sponsored efforts appear to be capitalizing upon the efforts of REDEAL in establishing data collection procedures, using existing data, and using project organizational schemes similar to REDEAL. In general, it appears that REDEAL has encouraged some increase in interest and need for research and evaluation activity, both within existing Athabasca University functions (e.g. course delivery, institutional studies, etc.), and as a part of new Athabasca University efforts (e.g. computer-based education project, REDEAL Revisited, etc.).

Given that many full-time REDEAL staff members are available to Athabasca University as regular employees, the above efforts can utilize the expertise gained during REDEAL to prevent re-invention of procedures and methods already tested and developed during REDEAL.

Summary

In summary, REDEAL only scratched the surface of the problem facing distance educational institutions. Although that may seem rather obvious to many, convincing an institution to take that perspective, as it strives to meet learners' needs and political realities is a difficult proposition. The major thrust of REDEAL's implementation plan involves

Integrating REDEAL staff and resources into situations where a continual research and evaluation ethic can be maintained for Athabasca University. Moreover, simply demonstrating that research and evaluation efforts can produce useful information and results goes a long way in ensuring that implementation will be a viable enterprise.

The Future of Research and Evaluation at Athabasca University

One of the major goals of REDEAL was to foster a university-wide concern for the carrying out of research and evaluation activities directly related to course design and delivery. The rationale for such a goal may be described as follows:

- a. Although the university has given much verbal attention to the importance of research and evaluation activities, it has completed few systematic and rigorous investigations.
- b. There is always tremendous pressure in any existing institution to use meetings and committees as the major source of information on institutional change. Such groups are rarely in a position to gather the data important in making the proper decisions.
- c. There is always tremendous pressure in any existing institution to maintain the status quo. Most existing models of university level education, even those claiming to be innovative, are not designed to be cybernetic (i.e. they do not use data as the major source of input to change and improvement).

- d. Many administrators view research and evaluation activities as expensive frills, which although necessary to maintain the general credibility of the institution, are not important features in institutional planning and design. It is easier to make arbitrary decisions using the meeting and committee structure (i.e. there is nobody to blame when the group makes a decision. There is also so little data available almost anyone's analysis if any situation has some validity).

Athabasca University is in somewhat of a unique position at this point in time to capitalize upon research and evaluation activity in planning and change for several reasons. First, and probably foremost, the recent decision by the provincial government to relocate Athabasca University to a town one hundred miles north of Edmonton within five years will undoubtedly have a major impact on the institution. Although a superficial review of that decision clearly indicates that it was made almost blindly without clearly considering the consequences of the decision for the future of the institution, it does provide a turning point for Athabasca University. In many ways, Athabasca University is at a junction in its growth and development with an option to turn in many directions. The research and evaluation ethic in university design and planning is an obvious direction worth careful consideration. Given that the decision to relocate the institution violates a concern for data of any type, the research and evaluation direction may be an even more important decision for consideration. However, the university

must clearly be the one to make such a decision. Institutional funding agencies appear to generally lack concern and appreciation for empirically-based decision making. The relocation decision is a prime example of that lack of concern and appreciation, and should serve as an important lesson to Athabasca University in choosing a direction for internal decision making.

A second important reason why "now" is the time for considering research and evaluation as a model for Athabasca University growth and development extends much further than the Province of Alberta. The growing world-wide interest in distance education must be viewed by existing institutions as a challenge. Newly developing institutions tend to model on existing institutions to some degree (from 50 to 75%) while making idiosyncratic changes on their own (about 25 to 50%). Existing institutions must take the lead in collecting data on effectiveness and feed that data into institutional decision making in order to avoid serving as an inappropriate model for other institutions. Moreover, existing distance educational institutions must also serve as a model for data-based decision making.

A third reason why research and evaluation is important is directly connected with the student. Never before have such a wide variety of people been involved in university-level education. From housewives to senior citizens, this new clientele represents a challenge which cannot be met by traditional institutions. This challenge requires a level of understanding of these learners, their variances, and their patterns of behaviour which is not currently recognized. If

distance educational institutions are to adequately serve the needs of this new clientele they must remain responsive to these learners by perceiving and acting upon the fluctuating performance levels of this diverse group of individuals.

THE EVALUATION OF PROJECT REDEAL

Part I

This section of the REDEAL final report represents only part I of the overall REDEAL evaluation effort. Part II, consisting primarily of a report to be submitted by Evaluation Consultants Ltd., on the impact of REDEAL on Athabasca University will be completed and included in this section of the report by December 31, 1980. (See proposal at end of this section.)

The purpose of the evaluation of Project REDEAL is primarily to answer the questions determined to be of importance during the interim review of project REDEAL during the months of August, September and October, 1979. Both Part I and Part II of the REDEAL evaluation will address questions on that list.

REDEAL Evaluation Questions:

The evaluation questions deemed important at the interim review of Project REDEAL were listed as follows:

1. Did Project REDEAL identify the major variables important in learner motivation at Athabasca University? Responsible for implementation: John S. Daniel.
2. Did Project REDEAL conduct investigations into learner motivation in the areas identified as major variables? Responsible for implementation: Dan O. Coldeway
3. Did investigations into learner motivation have face validity as examined by a cross review of all members of the Project REDEAL team? Responsible for implementation: Dan O. Coldeway.

4. Did Project REDEAL obtain information useful in the future planning and design of courses at Athabasca University?
Responsible for implementation: Dan O. Coldeway.
5. Did Project REDEAL effectively communicate the recommended methodologies for dealing with learner motivation to Athabasca University? An implementation plan will be presented to the institution. Responsible for implementation: Dan O. Coldeway.
6. Was the implementation plan used by Athabasca University? The answer will involve an examination of research and development activities at Athabasca University to determine the extent to which the University accepted relevant data and incorporated methodologies into their mainstream activity. Responsible for implementation: John S. Daniel.
7. Did the implementation plan continue to be used by Athabasca University? Was there any spin-off to other institutions?
Responsible for implementation: Department of Advanced Education and Manpower.

In addition, an evaluation of the overall picture of adult learner motivation, as described in the REDEAL interim report, was also to take place.

Evaluation Results: Part I

The results of this evaluation are presented in point form with respect to each of the above questions. An evaluation report on the project by

Dr. John S. Daniel, former Vice-President, Learning Services at Athabasca University follows this section of the report.

Question #1

Question #1 is an attempt to determine whether Project REDEAL identified the important variables important in learner motivation at Athabasca University. Input to this question is presented in John Daniel's report at the end of this evaluation section.

Question #2

Question #2 addresses a concern regarding the extent the variables identified as important were investigated by REDEAL. The answer to this question can be divided into two parts. Part one describes the positive aspects of the answer (what REDEAL was capable of doing). Part two describes the negative aspects of the answer (what REDEAL was not able to do) and some possible explanations of the difficulties.

Part I (Positive Results)

- a. REDEAL sponsored research and evaluation activities relevant to all priority items presented on the list at the end of this evaluation section.
- b. Each individual and background project allowed for the collection of enough information to produce an individual report.
- c. In attempting to get answers to the variables identified as important, REDEAL moved Athabasca University closer to the problem.

- That is, the effort to collect data, the data collected, or the discussion of the overall problem in conducting the investigation will most likely move Athabasca University to a point where it is easier to address the problem.
- d. The overall data collection effort has allowed REDEAL to more clearly pinpoint the variables of greatest importance to the institution. Although this generally raises more questions than answers, such an outcome is generally positive, especially in relationship to lack of empirical data on distance education.

Part I (Negative Results)

- a. The peer tutoring project, although initially planned as a fairly comprehensive look at the problems and results of peer tutoring in distance education, was hampered by Athabasca University's internal political problems. As a result, only a very limited pilot project was conducted.
- b. The analysis of learner characteristics and course characteristics in relationship to learner performance was hampered by problems in the computerized student record system. Although a great deal of progress was made in working with this data, difficulties with the accuracy and completeness of the data base (the central computer student record system) remained problematic. It is highly unlikely that this could have been foreseen by REDEAL during the initial phases of the project. Only by working closely with the data base has REDEAL been able to more clearly understand the problems in

securing information on learner attributes, learner performance, and course characteristics, let alone the logistical problems of processing that information and validating its accuracy. REDEAL's work in this area may well be one of the most positive contributions to Athabasca University. As a result of REDEAL efforts it may now be possible to begin rebuilding the student information system to meet institutional and research needs.

- c. Problems with evaluating Athabasca University efforts not initiated by REDEAL also should be noted. REDEAL initially planned to do a comprehensive evaluation of the television courses at Athabasca University to examine the television schedules' effect on pacing, and look carefully at the work done to use computer generated schedules to assist in learner management. Both of these efforts were initiated by persons outside of REDEAL prior to the start of the REDEAL effort. Because both of these activities had relevance to REDEAL concerns, they were of interest to the project team. However, because both of these efforts were not originally conceptualized in a research framework and were not directly connected with evaluation plans and/or designs, data collection and interpretation was extremely difficult. Logistical problems, missing data, and relatively small samples make interpretation of the available information difficult and only tentative conclusions can be reached. Again, REDEAL's attempts to evaluate such findings and the resulting problems identified in that evaluation, may have positive effects on later efforts by Athabasca University along

these lines. For now, however, detailed information on important questions regarding these variables must await a future effort.

- d. REDEAL also had the intention of analyzing the instructional characteristics of a selection of Athabasca University courses and attempt to correlate those characteristics with the performance characteristics of the learning population enrolled. Although many of the hypotheses connected with the interaction between learner characteristics and performance will be evaluated (see REDEAL research report #9), the problem of determining instructional components and characteristics within existing Athabasca University courses was not solved. Several attempts by both Ms. Francis Gatz (REDEAL graduate assistant) and by members of the instructional design unit at Athabasca University (e.g. work by Dr. Muriel Stringer) pointed to the logistical and technical problems with classifying instructional design components within existing Athabasca University courses.

Question #3

Question #3 addresses the perceptions of REDEAL professional staff on the face validity of REDEAL's efforts throughout the project. In order to determine each REDEAL staff member's perception, they were asked in late October, 1980 to write a brief paragraph describing their response to question #3. This information is described below:

Response from Dan O Coldeway (Project Director):

"It's so much easier now to be critical of the work REDEAL pursued. Hindsight makes the job of evaluation easier and points to many difficulties encountered over the last 22 months. However, if I stop and remember where I was in my thinking at the time of preparing the original proposal I am struck with how much more I now understand and know about Athabasca University. Even though I cannot put my finger on a single project that hasn't raised more questions than it produced answer for, the total effort has produced outcomes which will form the foundation of future knowledge and development of distance education. More importantly, I feel the institution has learned that a little effort into research and evaluation can have positive effects, both directly and indirectly, into the development of Athabasca University.

It's also interesting to note that many of our original hypotheses and project goals seem even more valid now that the project is 'officially' complete. That is, more detailed information regarding variables investigated and reported on during REDEAL must still be collected and analyzed. The important thing to note is that Athabasca University appears, for the first time since my arrival, to be prepared to engage in the pursuit of that information.

The question of face validity of REDEAL efforts has also been impacted by the recent decision by the Government of Alberta to relocate Athabasca University approximately 100 miles north of Edmonton to the town of Athabasca, Alberta. Prior to that decision, the development of Athabasca University and its procedures through careful research and evaluation seemed to be of prime importance. Now, however, politics and survival must be perceived as being prime areas of concern. The validity of REDEAL efforts almost seems reduced by the political concerns of the last six months. It is painfully clear to me that the research, evaluation, and the institutional development ethic REDEAL worked so hard to achieve may have to take a back seat to political survival. Although REDEAL's investigations into learner motivation in distance education has, in my opinion, considerable face validity, I fear that validity may be short lived because of the power of decisions made by the Alberta government which lack face validity of any kind."

Response from Robert Spencer (Research Associate):

"Given the current 'state of the art' in distance education at Athabasca University, I believe that the investigations in adult learner motivation done by Project REDEAL had face validity. The investigations carried out by members of the REDEAL team were based on what the staff at Athabasca University felt was important, what the literature identified as being important, and what individual project members' experience dictated as being important. While the project often raised more questions about learner motivation and management than it provided answers, I believe the project was a very important step in the University's on-going development. It is my feeling that as a result of REDEAL's efforts, the University is now at the point that it can begin to more clearly identify those variables which are important in effecting learner motivation. REDEAL just scratched the surface in identifying these variables, but the project did lay the ground work for making further efforts more fruitful. This was achieved by: 1) learning the limitations of the data currently available to the University on student performance and characteristics; 2) learning how to manipulate this data by Standard Statistical Packages (SPSS); 3) having a better understanding of the important, relevant questions to ask regarding learner motivation and management; 4) gaining a better appreciation

of the problems associated with applied research in a distance learning environment; and 5) raising the University's consciousness about the problem of attrition and need to carefully investigate ways to reduce attrition."

Response from Geoff Peruniak (Research Associate):

"I believe REDEAL has been an extremely effective project. I think a large measure of its success came about because it resisted getting hung up on finding discrete answers to over-generalized questions. In a unique educational institution, engaged in a relatively new innovative phenomena, the mark of success is learning to ask the right questions of the right groups at the right time in the right way. In this REDEAL has made great progress. The project has located the major boundaries of hypothesis-testing. It has exploded a number of myths in areas such as motivation, for seminar attendance, course completion rates, adequacy of tutor-student contact and confirmed existing assumptions about the heterogeneity of the student body and the implications this has for standards in educational packaging.

There were other major factors besides hanging loose and getting a handle on the ebb and flow of data control that contributed to the success and effectiveness of Project REDEAL. It:

- (1) got in touch relatively quickly with the range of needs, concerns and objectives of the institution;
- (2) helped put staff members closer in touch with the student data base. In effect, it closed feedback loops linking actions to consequences in the system;

- (3) established credibility by adapting and testing specific new methods and procedures for course delivery in the open education context; and
- (4) demonstrated the need for specific data-gathering initiatives to feed decision-making processes at the University.

If there were any shortcomings of the Project they were that we should have been more phenomenological in the initial stages. For instance, we might have spent more time with the active, non-active and potential learner population with no more in mind than learning about the range of their motivations, traits, and backgrounds. Efforts by the funding agency to make the Project accountable for specific tasks and to curtail others, were understandable, but probably premature and confusingly limiting at best."

Question #4

Determining whether REDEAL collected information useful in the future planning and design of courses at Athabasca University at this early stage is difficult, if not impossible. Most of the information collected during REDEAL will not be felt by the mainstream course development system at Athabasca University until early 1981. However, a refinement of the above question into two more specific questions may shed light on this evaluation issue. Those questions are:

- a. Has REDEAL had an impact on course planning and design to date?
- b. Is the type of information in REDEAL reports the type that will be useful in course planning and design in the future?

The answer to the first question is yes. To date REDEAL projects have already influenced the design of key courses at Athabasca University. For example, the REDEAL work with the introductory accounting course in order to facilitate investigating variables important in the Personalized System of Instruction in Distance Education has led to improvement in the design of new accounting courses. REDEAL team members were called upon to provide their expertise in reviewing plans for the development of the new accounting course series. Instructional principles identified as important in the PSI research project were used extensively in the design of the new and important accounting courses.

REDEAL projects have also influenced the design of other courses at Athabasca University. Course planning and design documents prepared over the last 12 months often refer to REDEAL course design plans. Moreover,

several course teams have requested that a more complete research and evaluation design be incorporated into their course planning in order to capitalize upon the information demonstrated to be useful by REDEAL efforts.

REDEAL has also had an impact on course planning and design in many less direct, but equally important, ways. Much of REDEAL's efforts relate directly to the design of the course delivery system at Athabasca University. REDEAL has encouraged the University to become much more experiential with its delivery system and attempt to find new ways to reach learners. Since course delivery and design are integrally linked, (many would argue they are totally confounded), concerns over delivery have had direct impact on concerns over course planning and design. As REDEAL reports begin to become more widely understood, this impact should be even greater.

Both positive and negative outcomes, both for REDEAL and Athabasca University, have occurred over the duration of the REDEAL project. The list below summarizes a selection of the positive and negative outcomes:

Positive Outcomes:

I. The Instructional Records System

- a. REDEAL staff participated (was asked to participate) on the Instructional Record System Task Force which resulted in the following:
 1. new tutor logs
 2. revisions to the information system
- b. The University also received repeated requests for learner tracking information of the type REDEAL was gathering in its research and evaluation efforts.

II. The Work with PSI in Accounting 216

- a. Many Athabasca University staff members took an active interest in the use of the telephone for immediate feedback to learners.
- b. Several new courses attempted to use the learner management system implemented in the PSI version of accounting designed by REDEAL.
- c. There was an interest in the use of learner demographic data for course design purposes as a result of the PSI work in accounting.

III. Course Completion/Attrition Studies

- a. The University as a whole became much more concerned with attrition and completion rates. The interest was instrumental in allowing both REDEAL and the office of Institutional Studies at Athabasca University to gather more accurate statistics describing this problem.
- b. The University budget began to reflect an interest in completion/attrition and the general problem of learner performance. A new position in course development was created entitled 'instructional evaluator' and oriented directly toward the problem of course and learner success.
- c. A proposal to institute a project entitled REDEAL Re-visited was accepted by Athabasca University. This project would allow further investigations into the problems of completion/attrition.

- IV. Increased University Wide Interest in Research and Innovation
 - a. Several projects have been proposed by groups within Athabasca University including projects in areas similar to the ones investigated by REDEAL (e.g. the use of seminars, innovative course design, an interest in learner performance, peer tutoring).
 - b. There appears to be an increasing awareness on the part of Athabasca University staff and administration about the importance of research, evaluation and development activities.
- V. Increased University Interest in Tutoring Training and Tutor Skills
 - a. The tutor skills workshop materials and methods developed during REDEAL will be used, in modified form, by the University.
 - b. The University has budgeted for tutor skills development.
- VI. Considerable Interest by Athabasca University in the Tutor Pay System
 - a. A new tutor pay system was put into place for 1980-81.
 - b. More interest in evaluating tutor pay and management schemes used by Athabasca University
- VII. An Interest in Research and Evaluation Issues with Respect to Problems Inherent in the Re-location Issue
 - a. REDEAL staff have been asked to provide their expertise on issues related to the possible relocation of Athabasca University.

- b. The future planning of Athabasca University programs and systems has received increased attention.
- VIII. REDEAL has Become Actively Involved in University Sponsored Evaluation Projects
 - a. REDEAL has provided data on the paced-package delivery project.
- IX. The Work REDEAL has Done with the Computerized Learner Information System will Provide an Excellent Base for Improvement of Athabasca University's System.

Negative Outcomes:

- I. Because of REDEAL's need to understand the daily behavior of learners as they participate in Athabasca University's courses, some people within Athabasca University have felt REDEAL was 'spying' on them through the learner. Although such feelings are not widespread, they are problems in conducting in-depth evaluation and monitoring activities.
- II. The reaction by the Social Science unit to the peer tutoring project proposal must be viewed as a negative outcome. Apparently communication between REDEAL and Social Science on this issue was not clear.
- III. A project as large as REDEAL puts demands on Athabasca University's services (e.g. general services, the registry, computing services, etc.) which can often be perceived by those units as overloads.

Although funding for specific services helps alleviate these problems, the overload and disruption caused by projects like REDEAL remain problematic.

- IV. The relationship with the primary funding agent, Advanced Education and Manpower, was not always positive. Changes in Advanced Education and Manpower staff over the course of the project made communication difficult. In contrast, REDEAL's failure to clearly understand Advanced Education and Manpower's requirements for information was often a problem.
- V. The control over REDEAL financial information was often a problem. Athabasca University's relative lack of experience with large scale research and evaluation projects made careful financial tracking difficult during the project. Fortunately, overall budget expenditures were in line with original budget expectations. However, future projects of this type should strive to determine more specific budget information control systems.

The second question is difficult to evaluate objectively. There is little doubt in the minds of REDEAL team members that the knowledge they have gained through REDEAL would be extremely useful in course planning and design. Given that a great deal of this knowledge will be passed on to other staff members at Athabasca University, it is hoped they too will gain considerably from REDEAL efforts. Moreover, the fact that key REDEAL team

members will become full time Athabasca University staff members primarily working in the course development area, it is highly likely that their expertise and REDEAL generated information will be used extensively.

The question regarding the usefulness of REDEAL information for course planning and design must also be qualified. Much of REDEAL's efforts were not specifically directed toward the planning and design of courses, but to the planning and design of distance educational systems 'that work'. That means that simply improving courses as a result of REDEAL information relevant to that task may not be enough. Changes in course delivery, institutional procedures, and other factors impacting learners must also be made. Fortunately, there is every indication to this point in time that such changes are possible and will be facilitated by the REDEAL effort.

Question #5

Question #5 is largely addressed in this implementation section of this report. The success of that implementation plan can only be determined over time. However, every indication to date suggests that a large number of Athabasca University staff members are eager to read REDEAL reports, participate in REDEAL seminars, and team up with REDEAL team members for follow-up work in important areas identified by REDEAL. However, the work in this area has just begun. Efforts like REDEAL Re-visited, the Athabasca University computer based education project, and others strongly suggest that a great deal of communication between REDEAL and Athabasca University

has taken place already. Interest in REDEAL from within and outside of Athabasca University indicates a great deal of communication will take place in the future.

Question #6:

Input to this question is presented in John Daniel's document at the end of this section.

Question #7:

Input to this question awaits work to be completed by Advanced Education and Manpower.

Evaluating REDEAL's Overall Picture of Learner Motivation

Although not specifically listed as an evaluation question, concerns over the evaluation of REDEAL's picture of learner motivation were identified as important during the interim report. Given that the REDEAL learner motivation model was used extensively by REDEAL in the early phases of the project, a concern over its validity at this point in time seem entirely relevant.

The adult learner motivation model proposed by REDEAL during the early phases of the project is discussed in the section of this report entitled 'A Re-examination of REDEAL's Motivation Model of Adult Learning'. This section talks about the importance and validity of that model, both as a theoretical model for adult motivation and as a working model for research and evaluation planning. The reader is referred to this section for input on this evaluation question.

Summary

In general, REDEAL has been a successful research and evaluation project for Athabasca University. Not only has the project been successful because work was completed, data analyzed and results reported and discussed, but because the act of engaging in research and evaluation work has increased Athabasca University's interest in pursuing the answer to important questions that cannot be answered without such activity. Prior to REDEAL Athabasca University had no means, financial or managerial, to encourage research and evaluation activity. The funding and activity of REDEAL gave Athabasca University that initial means and momentum necessary for research and evaluation activity. REDEAL has demonstrated that the investment may be worth the expenditure of time and money, and there is every indication that Athabasca University will continue investing both time and money in research and evaluation activity. Of most importance, however, is that Athabasca University may have now matured to a point where, because of activities like REDEAL, stopping to take a hard look at its procedures and results is not only possible, but desirable.

ATTACHMENT I

Selection, Prioritization of Personnel Expenditure Estimates for
Developmental Activities Identified for Project REDEAL, Phases IV-VI.

Category One:Background Activity

Project Director --- Two man months
Research Associate --- Three man months
Research Associate --- Three man months
Graduate Assistant --- One man month

Category Two:Individual Projects

Priority	Project	Personnel	Cost
1	PSI in Accounting	Research Associate	7 m.m.
2	Tutoring Management ¹	Project Director	3 m.m.
3	Peer Tutoring ¹	"	2 m.m.
4	Tutor Skills ¹	"	1 m.m.
5	Computer Generated Schedules	Graduate Assistant/ ² Project Director	1 m.m. 1 m.m.
6	Group Contact	Research Associate	7 m.m.
7	Television and Pacing	Research Associate	1 m.m.
8	Learner Self-Management	Graduate Assistant	6 m.m.
9	Course Characteristics	Research Assistant	1 m.m.

¹The tutoring project was broken down into three projects for purposes of prioritization.

²A full-time graduate assistant works 12 hours per week.

Impact of the REDEAL Project on Athabasca University

by

J. S. Daniel

Vice-President

Learning Services

Introduction

On November 5, 1979, a meeting on the evaluation of the REDEAL project was held at AAEM. At this meeting the Department requested that one aspect of the evaluation be an assessment of the impact of the project on the learning system operated by the University. This request arose from the nature of the project which was intended not as a research study but as an attempt to institutionalize certain developments and improvements in the Athabasca learning system by concentrating significant resources on some key problems.

As the Executive Officer responsible for the academic operations of the University I was asked to assess the impact of REDEAL on the learning system under three headings:

- (1) Did the priorities set by REDEAL match real and important problems in the University's learning system?
- (2) Has real change occurred and been institutionalized?
- (3) Has the REDEAL project changed the general way in which the University does its business?

Method

Question 1 is addressed by an analysis of the official record of the University's Academic Planning and Policy Committee and of the actions taken by the University administration. The responses to question 2 and 3 also start from this base although, since the REDEAL project is barely a year old, some observable changes it has precipitated are only now beginning to be reflected in University documents.

Results

1. The match between REDEAL priorities and real problems.

The REDEAL project was planned in December 1978. An analysis of the minutes of the Academic Planning and Policy Committee for the whole of 1978 shows that, apart from day-to-day 'housekeeping' matters, the following substantive longer term issues were discussed with the frequency indicated:

- Program planning (11)
- Course design and format (8)
- Instructor delivered courses (6)
- Degree regulations, etc. (4)
- Completion rates (2)*
- Learning Centres (2)

Teleconferencing (2)
Student recruitment (2)
Experiential learning (1)
Outreach to the community (1)
Counselling (1)
TV use (1)
Student support (1) *
Credit by examination (1)

Notes

- * Completion rates became an important preoccupation of the Athabasca University Governing Council in fall 1978.
- * A special task force to study the student support system was created by the Vice-President, Learning Services in October 1978.

Program planning (choice of program areas and course topics) and degree regulations were not an appropriate area for REDEAL involvement. The other main priority areas emerging from the APPC minutes were all addressed in one or more of the REDEAL sub-projects. (See attached list.)

Sub-project #1, PSI in Accounting, is an important attempt to develop more optimal course designs and formats and #9, course characteristics, provides important background data. The three

tutoring projects (2, 3, 4) address directly the question of student support and, by extension, the key issue of completion rates. Project #5, computer generated schedules, touches both course design and student support.

The group contract project (#6) explores a vital area of course design and has implications for two issues of concern to APPC, instructor-delivered courses and learning centres.

1978/79 saw an order of magnitude increase in the University's use of cable TV. Project #7 on television and pacing was therefore timely. Finally, the learner self-management project is an attempt to improve completion rates in an open entry learning system.

While the projects chosen by REDEAL reflected the main concerns expressed about the University's learning system in 1978, they also helped to focus interest on certain areas and thus to influence the topics discussed at APPC. Analysis of APPC minutes for 1979 shows an increasing amount of discussion about course design and format. The creation by the Vice-President, Learning Services of a Task Force to study the tutoring function at the University also reflected the interest of the institution in the problems chosen for investigation and experiment by REDEAL.

From these analyses I conclude there was an excellent match between the priorities set by REDEAL and the problems facing the University's learning system.

2. Has real change occurred and been institutionalized?

There is no doubt that real change has occurred as a result of the REDEAL project. The more difficult question to answer is whether the changes will last and whether they have had the sort of 'across the board' effect which can be called institutionalization. In attempting to answer this question it will be simplest to treat the projects seriatim.

1. PSI in Accounting

REDEAL has substantially altered the design and delivery strategy for this important course. These changes have improved completion rates and will be retained. Thus the REDEAL version of Accounting 216 has been institutionalized. The concept of the 'acceptable instructional baseline' pioneered in the revision of this course has gained acceptance in other courses.

2. Tutoring projects

In this area the institutionalization of REDEAL work will be considerable. Regular tutor skills workshops designed on the basis of REDEAL work are now held. Although the tutor management techniques proven effective by REDEAL have not been generalized across the board this now seems only a matter of time. The rapid escalation of tutoring costs

under the old management system has now precipitated a crisis and an institutional determination to cut costs which has overcome the inertia obstructing change. A new tutor management system should be in place before REDEAL completes its final report and this system can then be compared to the prescriptions of REDEAL.

Peer tutoring does not appear likely to increase in the near future. However, in this area the REDEAL experiment was on too small a scale to be conclusive.

Other Projects

The results of the group contact study prevented the University from making a costly mistake. Some administrators who were about to act on their hunch that group contact would increase course effectiveness were sufficiently discouraged by REDEAL findings to drop the idea.

Not enough is known yet of the results of the other projects to evaluate whether they will be the cause of institutional change.

3. Does the institution now conduct its business differently as a result of REDEAL?

Throughout the life of the REDEAL project Athabasca University has been changing rapidly as a result of numerical growth, program expansion and the Government's decision to relocate the University. Relating changes in the way the institution conducts its business to specific causes is therefore a risky business. However, after discussing the question with my executive colleagues I believe the following changes can be attributed directly to REDEAL.

a) Awareness of completion rates

REDEAL has been more successful than the regular institutional channels at measuring student completion rates. Project members have used their information to great effect in keeping this performance criterion constantly in the forefront when decisions and plans are made. Without REDEAL the University would be making less use of hard data in charting its future.

b) Research is legitimate

The REDEAL effort has legitimized the notion that the University should devote significant resources to research and development work on its learning system. This will be important in the future and has already had an impact on resource allocation for 1980/81.

c) Better cohesion between academic development and resource planning

The obverse of the legitimization of research is that those concerned with academic operations have acquired, as a direct

result of REDEAL, a greater appreciation of the role of resource allocation in enabling academic objectives to be achieved. Thus the 1980/81 operating budget was subjected to much greater scrutiny by learning system staff than previous budgets. This is a healthy development.

Conclusion

From this analysis of the evolution of Athabasca University before and during the REDEAL project I conclude that the impact of the project has been extremely positive. Given that the primary aim of the project was to effect the institutionalization of improvements to the University's learning system I hope that AAEM will take this positive impact into account in assessing the value of REDEAL as an I.P.F. project. While I expect that REDEAL will also produce a number of competent and useful R and D reports I believe that the lasting impact of the project on the University's operation is the most important criteria.

Why has REDEAL been successful? Part of the answer lies in the way the project design has respected the most important conditions for successful innovation in educational institutions, viz:

- the project has been integrated into the regular structure of the University
- it has reinforced reforms already occurring

- it has concentrated on important mainstream problems
- it has fed its results back into the system in a continuous manner.

It should also be emphasized that the project has benefitted from having an unusually competent and sensitive group of professionals associated with it. Credit for selecting these individuals and for managing their efforts effectively must go to Dr. Dan Coldeway. In a very real sense this is his project. From the University's point of view Dr. Coldeway and the REDEAL project have amply justified the confidence shown by AAEM when it agreed to fund this unusual venture.

J.S. Daniel

1980-05-26.

Evaluation Proposal

from

Evaluation Consultants, Ltd.

Introduction

This proposal is submitted to D.O. Coldeway, Director of Project REDEAL at Athabasca University, as a result of informal discussions between the project staff and representatives of Evaluation Consultants (Edmonton) Ltd. (ECEL) M.A. Doherty and D.A. MacKay would serve as principal investigators for the external evaluation if this proposal is accepted.

Preparation of the proposal followed a briefing session with Project REDEAL staff on September 18, 1980 and a review of some of the project documentation, particularly Technical Report #1 (The Interim Report to Advanced Education and Manpower [AAEM]) and the correspondence between the Project and AAEM which followed discussions of that Interim Report.

The proposal is comprised of five parts:

- (1) Rationale for the external evaluation,
- (2) Evaluation questions,
- (3) Data collection procedures,
- (4) Timeline and description of the evaluation team,
- (5) Budget for the evaluation project.

1. Rationale for the External Evaluation. The external evaluation of Project REDEAL means completion is intended to achieve two main purposes: (1) to provide Alberta Advanced Education and Manpower with information as to the Project's implementation and effectiveness, and (2) to provide Project staff and other units of Athabasca University with information that will assist the University to capitalize on the Project output and to develop other innovative projects in the future.

It is clear to the proposers that there are already substantial amounts of data available because of the strong research component in Project REDEAL. The job of the external evaluation team would be to obtain, analyze, and report additional information to answer the evaluation questions listed below.

2. Evaluation Questions. The following set of questions is intended to guide the external evaluation in terms of the major, global questions that might be addressed.

1. Was the project implemented as described in the project proposal to AAEM and in other project planning documents?
2. To what extent were the intended objectives of the Project achieved?
3. What side-effects did the Project have upon other activities, projects, and programs at Athabasca University?
4. What implications for future research and development projects of a similar nature does Project REDEAL have for AAEM and AU?

3. Data Collection Procedures. The data required to deal with the four evaluation questions will be obtained in the following ways:

1. Semi-structured interviews will be conducted with a small sample of other AU staff, and a small sample of staff of AAEM. These interviews are intended to obtain information, opinions, and suggestions regarding the Project.
2. Questionnaires will be administered to AU staff (other than REDEAL staff). Data similar to those sought through the interviews will be obtained through the questionnaire study.

4. Timeline and Description of the Evaluation Team. The evaluation team from ECEL will be led by M.A. Doherty and D.A. MacKay. Both of the principal investigators have had external experience in program evaluation, educational planning, and policy analysis.

The timeline proposed for the evaluation is as follows:

<u>Activity</u>	<u>Completion Date</u>
1. Approve evaluation proposal.	October 27, 1980
2. Data collection.	November, 1980
3. First draft of evaluation report.	December 5, 1980
4. Final draft of evaluation report.	December 15, 1980

5. Budget for the Evaluation Project. The following are the proposed budget items for the project:

1. Principal Investigators
17.5 days @ \$200.00 per day \$3,500.00

Proposed Schedule for Payment

1. Upon approval of proposal (October 27, 1980)
Payment #1 = \$1,000.00
2. Upon presentation of final draft of report (December 15, 1980)
Payment #2 = \$2,500.00

A Re-examination of REDEAL's Motivational
Model for the Adult Learner

In an effort to better understand the multitude of factors which influence adult learner motivation, REDEAL constructed a working model of adult learner motivation (see Figure 1).

The REDEAL model of learner motivation rests on these assumptions:

- a. There are many factors which combine to effect learner motivation.
- b. Factors work simultaneously to impact motivation.
- c. Individual differences within the learner population makes the relative contribution of any single factor on an individual learner variable.
- d. Institutional design factors tend to influence factors which are closer to learners.

As was described in REDEAL's slide-tape program describing the adult learner motivational model, the model is an "environmental" approach to adult learning. That is, the model attempts to identify features of the educational environment which would have an impact on the learner. Any feature of the environment which could potentially have an impact on the learner may be added to the model (the main reason it is described as a working model).

It should be pointed out at this stage that the goal of REDEAL was not to create a model of adult learning. In contrast, the model was constructed to assist in research and evaluation planning. Therefore, very little attention was paid to refinements in the model as a result of REDEAL efforts.

Figure 1 goes here

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Validity of the Model

In general terms the REDEAL model appears valid. It describes the major factors which effect learners as they participate in courses in the distance educational setting. However, the model has two major drawbacks. First, it may not be complete. Factors not anticipated to effect learner motivation may not be included in the model as it exists currently. As more information becomes available from research and evaluation efforts this problem will be addressed. However, it is highly unlikely that a complete model will emerge in the near future.

The second major drawback of the model is that it currently does not describe the level of contribution of each factor to motivation of the adult learner. Although it would be possible to apply REDEAL findings to the model to begin to determine relative contributions of the factors described in the model, such an application would not significantly improve the model. The volume of data on all factors within the model is still too low to make meaningful modifications of the model without distorting the total picture.

Even though it would be difficult to apply quantitative information to the model, it is possible to qualitatively describe the relative contribution of factors within the model. For example, it is clear from many of the REDEAL projects that factors not under the control of the institution (i.e. personal factors in the learner's life) have a significant impact on learner performance. It is also highly probable that personal factors interact significantly with course content and university program requirements. Although learners are interested in engaging in university level work at the time of enrollment, that

.. interest may not be enough to sustain their behaviour in courses which present traditional liberal studies content and require a large commitment of time and energy for completion. Unfortunately, the trade-offs in this area are difficult to discuss in the open admissions system. That is, it may not be possible to improve completion rates in courses which require learners to engage in traditional levels and amounts of work without carefully screening learners prior to entry in those courses. In contrast, it would be difficult to modify the content in ways which would make life easier for a majority of learners and still call the course a university level course. Almost by definition, a university level course is designed to be interesting primarily to the people concerned with teaching that course, rather than designed to meet the specific needs and/or interests of the learners. Even though this problem exists in the traditional university setting (e.g. students complain about trivial and boring courses all the time) it is magnified in the adult learning environment. Unfortunately, the extent of this magnification is difficult to determine and discussing alternatives difficult, even for the innovative institution, attempting to call itself a university.

Although it is relatively safe to conclude that the relationship between course content and the interest level of the learner is a significant motivational factor, the contribution of other "extrinsic" motivational factors must not be ignored. It is clear from REDEAL's examination of learner profiles and performance that learners who "need" courses in order to complete programs in which they are actively enrolled, tend to complete

courses. This is not surprising given the strong pressures in our society for credentials and the relationship between credentials and job availability. This "paper chase" phenomenon, which is basically out of the control of the institution, not only produces considerable levels of motivation for the learner, but impacts to a large degree the host institution. Institutional decision making about the content of courses and programs is influenced by learner demands about transferability and certification of course credit. It appears that many learners are capable of completing even the most irrelevant and boring course if obtaining that credit has value to them in other ways. In contrast, attempting to modify courses to make them more interesting and relevant may also make them non-transferable and therefore of less value to the group of learners needing useable credits.

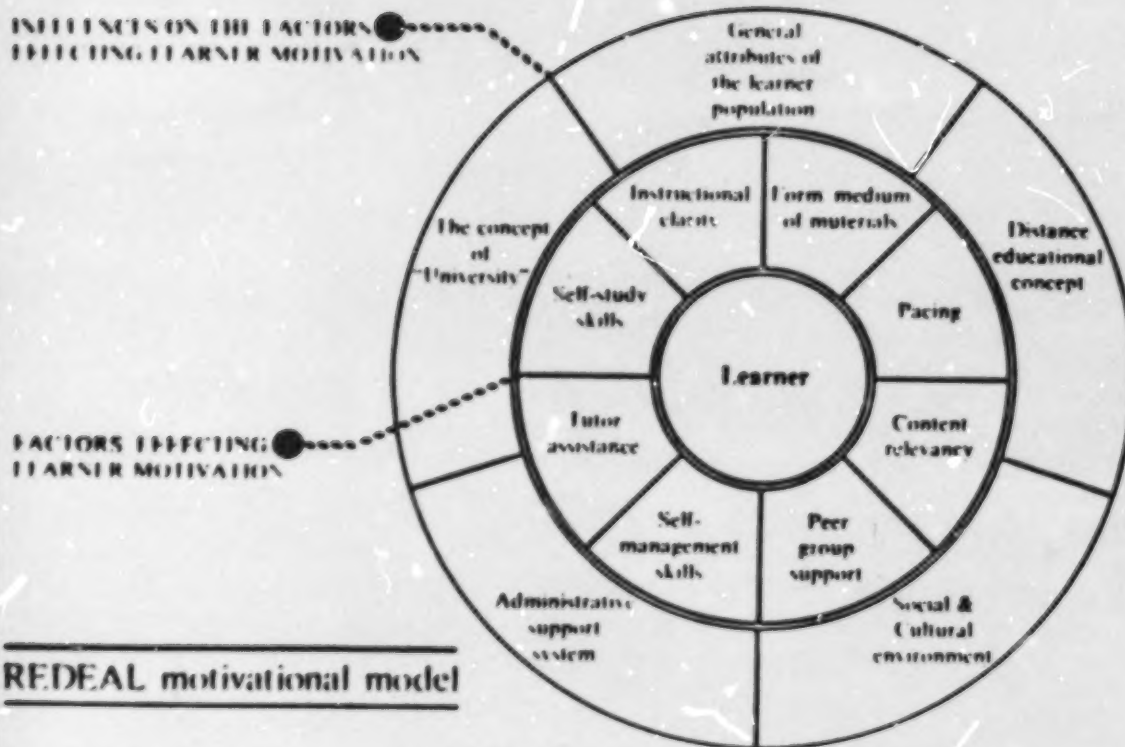
Although the above problem has obvious ramifications for both the learners and the institution, the scope of the problem is still an unknown. That is, it is difficult to determine the percentage of learners who require useable credits and would work to achieve them in comparison to the percentage of learners who are more interested in learning "for its own sake." The overall Athabasca University attrition rate would suggest that the former group is considerably smaller than the latter group. However, that assumes that those not completing courses (approximately 75% of all enrollments at Athabasca University) do not need the credits badly enough to remain active.

It is also relatively safe to conclude that the design of both the course materials and the delivery system has an impact on learner motivation. However, the relative contribution of these factors to the overall picture of learner motivation is impossible to quantify at this point in time.

Work in this area should continue as fast as possible. Distance delivery institutions depend, to a significant extent, upon printed materials as the prime method of communication between the institution and the learner. Understanding the dynamics of this form of communication, and how the materials can be made more effective through better delivery planning, will be an important area of research and development in distance education. Moreover, understanding the contribution of additional instructional variables added to correspondence delivery systems (e.g. tutors, student counselling, etc.) is also important.

In summary, the REDEAL model of adult learner motivation appears to still be functional as a working model and as a communication tool to describe to persons not intimately familiar with distance education, the complexities of distance educational delivery and its effects on learners. Refinements to the model as Athabasca University continues to explore the attrition/completion problem and refine its learner management techniques will undoubtedly occur.

Figure 1



REDEAL motivational model

Final Report

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Footnotes

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¹ REDEAL stands for Research and Evaluation of Distance Education for the Adult Learner.

² Only the original copy of the final report submitted to Advanced Education & Manpower contains the appendices. Anyone interested in REDEAL reports should contact Athabasca University.

Appendices

All appendices are bound under separate cover.

Appendices consist of Research and Technical Reports on the following list.

Project REDEAL

Research and Technical Report Series Publications

RESEARCH REPORT SERIES

<u>Report #</u>	<u>Title</u>	<u>Author(s)</u>
☐ 1	Investigating the Use of the Personalized System of Instruction in Distance Education	Robert Spencer
☐ 2	An Examination of Tutor Management Strategies for Use in Distance Education	Dan Coldeway
☐ 3	Exploring the Effects of Peer Tutoring in Distance Education	Dan Coldeway
☐ 4	Research and Evaluation of Tutor Skills Program	Victoria Williams
☐ 5	The Effects of Computer Generated Schedules on the Performance of Athabasca University Learners	Robert Spencer
☐ 6	Seminars as an Instructional Strategy in Distance Education	Geoff Peruniak
☐ 8	Examining the Effects of a Behavioural Self-Control Package on the Behaviour of the Distance Learner	Russ Powell Dan Coldeway
☐ 9	Factors Effecting Learner Motivation in Distance Education: The Interaction Between Learner Attributes and Learner Course Performance	Dan Coldeway Robert Spencer Muriel Stringer
☐ 10	Distance Education From the Learner's Perspective: The Results of Individual Learner Tracking at Athabasca University	Dan Coldeway Kathy MacRury Robert Spencer
☐ 11	A Comparison Between Paced Package and Home Study Courses with Respect to Completion Data	Robert Spencer Geoff Peruniak Dan Coldeway
☐ 12	Student Completion Rates Under Three Different Pacing Conditions	Gail Crawford

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TECHNICAL REPORT SERIES

<u>Report #</u>	<u>Title</u>	<u>Author(s)</u>
☐ 1	Project REDEAL Interim Report to Advanced Education and Manpower*	Dan Coldeway
☐ 2	Research and Evaluation of Distance Education for the Adult Learner: A Brief Explanation of Project REDEAL*	Dan Coldeway
☐ 3	Project REDEAL Final Report to Advanced Education and Manpower	Dan Coldeway
☐ 4	Individualized Instruction Under Control: The Design of Distance Learning Environments To Maximize Learner Success	Dan Coldeway
☐ 6	Interface With the Host Institution, Athabasca University	Geoff Peruniak Robert Spencer Dan Coldeway
☐ 7	Communication Skills Workshop For Tutors: The Manual	Victoria Williams
☐ 8	The Measurement of Attrition and Completion in Distance Learning Courses	Dan Coldeway Robert Spencer

 *No abstract provided

NOTE: Technical Report #5: The Evaluation Report will be ready for distribution at a later date.

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